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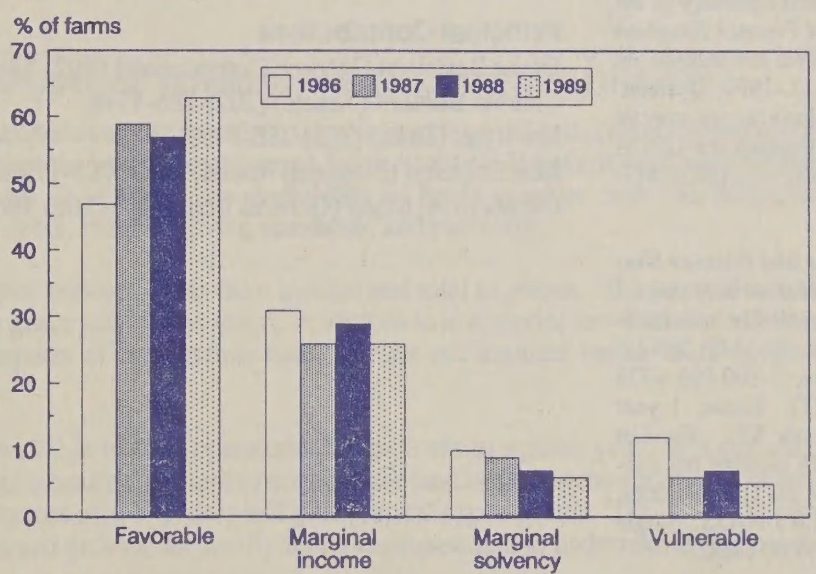
Agricultural Income and Finance

Situation and Outlook Report

Financial Conditions Continue Improving



Source: Farm Costs and Returns Surveys, USDA

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Summary

The Iraqi situation has pushed the price of crude oil up sharply. If a price increase of $10 per barrel is maintained for the remainder of the year, agricultural fuel expenses will be 10 percent higher than in 1989. This compares with a 5-percent increase forecast earlier. The effects on fertilizer and chemical expenses are negligible for 1990, but will probably be more pronounced next year because most application is in the spring. Acres planted and application rates are likely to be altered by higher priced manufactured inputs and increased transportation costs.

Net farm income for 1990 is still forecast to be in the range of $47 to $52 billion, compared with $47 billion last year. Net cash income is projected at $59 to $63 billion in 1990, gaining about one-tenth over last year.

Total cash receipts are expected to be 6 to 8 percent above last year's. Both crop and livestock sales are likely to advance $4 to $7 billion, putting 1990 total cash receipts at $168 and $172 billion. Direct Government payments and other farm-related income sources are down slightly from 1989; the current forecast of gross cash income is $183 to $189 billion.

The current forecast of cash expenses is $124 to $127 billion, up 1 to 3 percent over 1989. Total production expenses are expected to be from $144 to $148 billion. Items estimated higher for 1990 include fuels, marketing/storage/transportation, and cash rent.

The gain in total cash receipts is expected to raise net incomes in all five farming regions. Receipts in the three livestock categories (red meats, poultry, and dairy) are expected to reach or exceed 1989 levels. The growth in livestock receipts is projected to range from about 2 percent in the South Central region to 10 percent in the Northeast and Midwest. The Midwest and South Central regions, which typically provide the most feed grain and cotton sales, are likely to gain more than 10 percent in cash receipts for crops, while other regions' crop receipts will probably grow 1 to 4 percent.

Most regions show higher expenses than last year. The increase is mostly in the Midwest, which shows a 3- to 4-percent rise. The Northeast has the highest increase in cash expenses (6 to 7 percent) while the Southeast shows a possible decline.

The 1990 balance sheet reflects a strong position for U.S. agriculture. Most financial ratios are indicating improvement in the sector. Rising asset values and steady debt point to healthy net worths. The value of U.S. agricultural assets is estimated at $810 to $820 billion, up 2 to 4 percent over 1989. The increase is due mostly to rising farm real estate values. Nonreal estate assets are expected to increase 2 to 3 percent. Real estate debt is forecast to fall 2 percent by the end of 1990, while nonreal estate debt should be relatively stable.

Performance of the general economy will be strongly influenced by how long the Middle East crisis continues and how high oil prices climb. Current conditions point to a dampened demand, slower growth, and higher inflation.

GLOSSARY OF TERMS IN FARM INCOME AND FINANCE

Net cash income—is the difference between cash receipts, farm-related income, and direct Government payments, and cash expenses. This cash-based concept measures the total income farmers receive in a given year, regardless of the year in which the marketed output was produced. It indicates the availability of funds to cover cash operating costs, finance capital investments and savings, service debts, maintain living standards, and pay taxes.

Net farm income—is the difference between gross farm income and total expenses. This accrual-based concept measures the profit or loss associated with a given year's production. Additions to inventories are treated as income. Nonmoney items such as depreciation, the consumption of farm-grown food, and the net imputed rental value of operator dwellings are included.

Net cash flow—measures cash available to farm operators and landlords in a given year. It is calculated by adding gross cash income, the change in loans outstanding, net rent to nonoperator landlords, and the net change in farmers' currency and demand deposits, and subtracting gross cash expenses and gross capital expenditures. This financial indicator indicates the ability to meet current obligations and provide for family living expenses, and to undertake investments.

Debt/asset ratio—measures both proportional owner equity in the farm and the financial risk exposure of the operation (the extent to which the farmer has borrowed against assets). It is calculated as total debt outstanding as of January 1, divided by the farmer's estimate of the current market value of owned assets of the farm business.

Equity level—measures net worth. It is the hypothetical balance that would remain from the sale of assets and paying off existing debt. It is calculated as total operator assets minus operator debt outstanding.

Increasing Cash Receipts Raise Farm Finance Forecast

With increased production and steady prices, 1990 sales will jump to new record.

Growth in farm sales is expected to eclipse sinking direct payments and mounting expenses to boost farm income. Net cash income is projected at $59 to $63 billion in 1990, up about one-tenth over last year. Accounting for inventory and noncash items, the forecast for net farm income is from steady to a 10-percent gain this year.

Total cash receipts are expected to be 6 to 8 percent above last year's. Both crop and livestock sales are likely to advance $4 to $7 billion over last year, putting 1990 cash receipts at $168 to $172 billion. Livestock receipts are up $4 billion from earlier forecasts. Crop sales, direct Government payments, and other farm-related income sources are also up slightly, so the current forecast of gross cash income is $5 to $6 billion higher than previously published.

Net farm income for 1990 is still forecast to be in the range of $47 to $52 billion, up from $47 billion in 1989 and $5 billion above last May's projection. However, the value of inventory change is down $2 billion from projections made in May and farm expenses are $3 billion higher. Quantities of feed crops, soybeans, and cotton expected to be harvested this year have been lowered, and more grain was sold early in 1990 than anticipated. Although soybean and cotton prices have risen, this is offset by a drop in the volume of stored crops from earlier estimates.

Tight Supplies, Strong Demand Leading to Record Sales

The outlook for wheat and corn sales is essentially unchanged from earlier forecasts, with food and feed grains providing $27 to $31 billion in cash receipts. Although wheat prices are expected to be 20 percent below the 1989 average, a 30-percent gain in production likely will keep cash receipts at or above last year's $7 billion. Corn production is 3 percent less than projected in the spring, but still expected to be up 4 percent from 1989. The annual corn price averages about the same as last year.

Feed crop cash receipts are expected to be $2 to $4 billion higher than last year. The outlook for 1990 soybean and cotton cash receipts has improved. Production estimates have been revised downward due to bad weather and acreage reductions, pushing prices for both commodities higher than projected in May. Rather than turning down, soybean cash receipts are now expected to be about the same as in 1989, while cotton cash receipts are forecast to rise. This year's crop sales are forecast to total $79 to $82 billion.

Livestock receipts are expected to range from $88 to $91 billion in 1990. A $4 billion increase in the forecast of livestock receipts is mainly the result of revisions to milk prices. The expected average annual price rose about 10 percent in May, putting the 1990 price forecast 5 percent higher than last year's estimate. Cash receipts for all dairy products are $3 billion higher than prior forecasts and are now expected to show an increase over 1989.

Expect Moderate Growth in Expenses

The current forecast of cash expenses is $3 billion higher than in May, pointing to a 1- to 3-percent increase over 1989. Total production expenses are expected to be between $144 and $148 billion, up $1 to $5 billion from last year. Expenses for fuels, marketing/storage/transportation, and rent have risen since prior forecasts. Depreciation of farm buildings and equipment was revised downward about $1 billion for 1990.

The most recent projections of feed prices show about a 3-percent decline from last year. However, livestock numbers are expected to increase slightly, keeping the forecast of 1990 feed expense about the same as last year's $23 billion. Prices of feeder livestock have declined from earlier forecasts but are still 3 percent above last year, accounting for a modest increase expected in feeder expense.

Persian Gulf Fallout Already Evident

The forecast of fuel expense is higher because the August price of crude oil rose about $10 a barrel following Iraq's invasion of Kuwait. If this price holds for the remainder of the year, fuel expense will be 10 percent higher than in 1989. This compares with a 5-percent increase forecast earlier. Effects of the price hike on fertilizer and chemical expenses are negligible for 1990, but could be more pronounced next year because most application is in the spring. Number of acres planted and application rates are likely to be altered by the prospect of higher priced manufactured inputs (fertilizer, pesticides, and fuels) and increased transportation costs. Over the last three years, manufactured items have accounted for 16 to 17 percent of all cash production costs, with fertilizer and pesticides accounting for some 10 percent and fuels and oils accounting for 4 to 5 percent.

Both crop and livestock receipts are forecast up for 1990, totaling between $168 and $172 billion. Expenses are also up, but only moderately, so net cash income should rise about 10 percent to between $59 and $63 billion. Net farm income is also up, ranging from $47 to $52 billion.

Despite higher priced oil, farm finances are positive for 1990:

- Cash income is up $4 to $8 billion
- All regions should share in higher incomes, although not proportionately
- Higher oil prices will affect harvesting, but most other expenses have already been incurred
- With land values rising, equity continues to improve

Table 1--Record-high crop and livestock sales elevate total receipts

	1988	1989	1990F
	Billion dollars		
Crop receipts	71.4	75	79 to 82
Livestock receipts	78.8	84	88 to 91
TOTAL CASH RECEIPTS	150.2	159	168 to 172

F = forecast. See Appendix for more detailed receipts data.

Table 2--Production expenses creeping up

	1988	1989	1990F
	Billion dollars		
Farm-origin inputs	36.7	39	38 to 42
Manufactured inputs	18.4	21	20 to 23
Total interest charges	15.2	15	14 to 15
Other operating expenses	33.0	36	36 to 40
Other overhead expenses	28.5	32	31 to 34
TOTAL PRODUCTION EXPENSES	131.8	143	144 to 148
Cash expenses	112.0	123	123 to 127

F = forecast. See Appendix for more detailed expenses data.

Figure 1
Real Cash Receipts Falling Short of 1970's

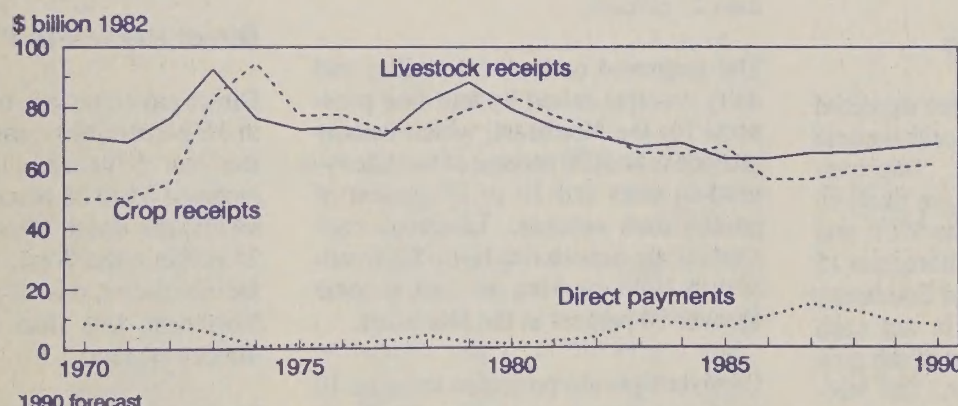
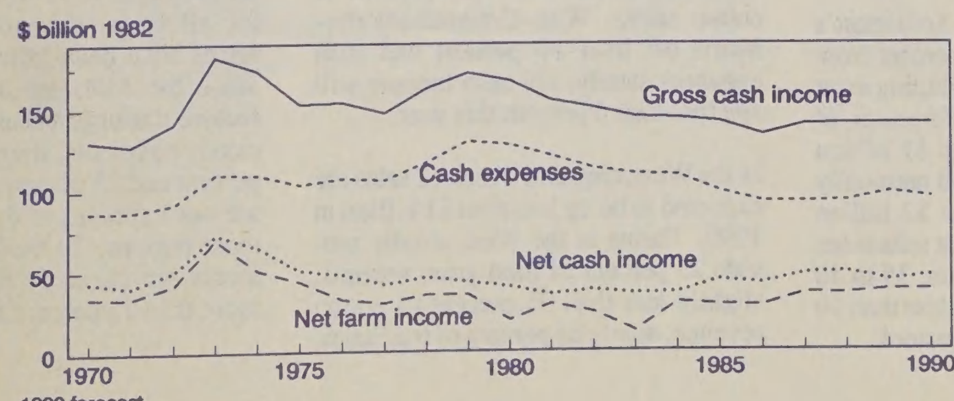


Figure 2
Trends in Real Income and Expenses



Sales Swell in All Farming Regions

Increases in cash receipts are forecast for nearly all farm products. Expenses are up also, but less than receipts, so net incomes should rise in all regions.

The gain in total cash receipts is expected to raise net incomes in all five farming regions. Receipts in the three livestock categories (red meats, poultry, and dairy) are expected to reach or exceed 1989 levels. Growth in livestock receipts is projected to range from about 2 percent in the South Central region to 10 percent in the Northeast and the Midwest. The Midwest and South Central regions, which typically provide the most feed grain and cotton sales, are likely to gain more than 10 percent in cash receipts for crops, while other regions' crop receipts will probably grow 1 to 4 percent.

Cash expenses are expected to increase 1 to 3 percent overall this year. However, forecasts show expenses declining in the Southeast. The Northeast has the highest percentage change projected in cash expenses, 6 to 7 percent. Most of the expense increase accumulates in the Midwest, which shows a 3- to 4-percent rise.

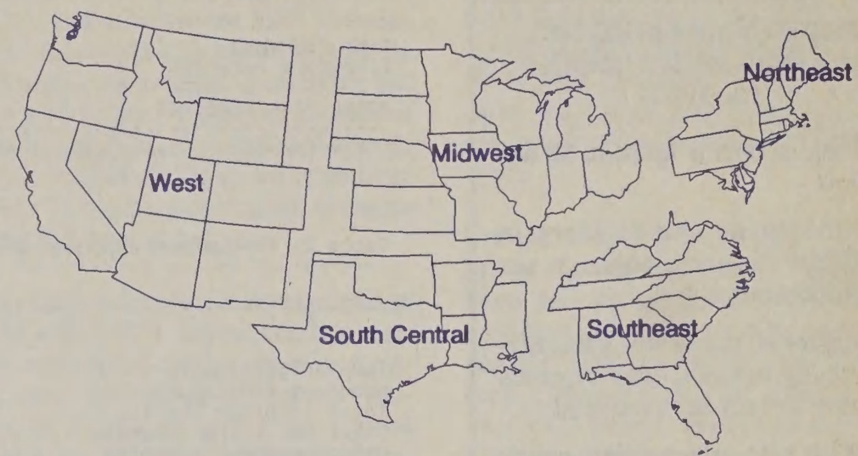
Regional Gains Uneven

The $5 to $9 billion increase expected this year in farm sector net cash income is not evenly distributed. Improvements in regional incomes are likely to be less than 5 percent in the West and South Central regions and more than 15 percent in the Midwest and Southeast. The Midwest's increase in net cash income is nearly 55 percent of the gain expected in the farm sector. The Midwest accounts for more than 70 percent of feed and oil crop sales, 50 percent of beef and hog receipts, and nearly 45 percent of dairy product revenue.

Current forecasts of the Southeast's livestock receipts are up 5 percent from last year, with poultry contributing most of the advance. Recent forecasts of poultry cash receipts are up $1 billion from earlier projections, and nationally show a gain of as much as $2 billion over last year. The Southeast sells more poultry than any other region, 35 to 40 percent of the U.S. total, but less than 10 percent of other types of livestock.

Figure 3

U.S. Regions



The Southeast generates 20 to 25 percent of all vegetable and fruit sales, and 15 to 20 percent of oil-crop receipts. These crops are less likely to show big gains in receipts this year than the feed-grain crops, but crop sales are forecast to be up 4 to 5 percent. With lower expenses, net income will increase more than 15 percent.

The improved outlook for poultry and dairy receipts raised bottom-line prospects for the Northeast, which usually provides about 20 percent of total dairy-product sales and 10 to 15 percent of poultry cash receipts. Livestock cash receipts are expected to be up $500 million in 1990, pushing net cash income up over 10 percent in the Northeast.

Crop receipts are projected to be up 10 to 15 percent over last year in the South Central region. The recent improved outlook for cotton receipts has a big impact in this region, which usually accounts for more than 50 percent of cotton sales. With Government payments off over 30 percent and cash expenses steady, net cash income will rise less than 5 percent this year.

In the West, crop and livestock sales are expected to be up less than $1 billion in 1990. Farms in the West usually provide 25 percent of food-grain receipts, slightly less than 35 percent of cotton revenue, nearly 65 percent of fruit sales, and 55 percent of vegetable cash receipts. Fruit and vegetable receipts are not projected to increase overall this year. Even with an increase in direct payments and a small increase in cash expenses, the West will account for less than 5 percent of the growth in net cash income expected in the farm sector.

Direct Payments Will Be Down

Direct payments are forecast to fall 10 to 15 percent this year on average. In the last 5 years, the Midwest has received 55 to 65 percent of direct payments; the South Central region, 15 to 24 percent; the West, 11 to 16 percent; the Southeast, 5 to 7 percent; and, the Northeast, less than 3 percent of all direct payments.

The Northeast, Southeast, and South Central regions anticipate payments to be 25 to 30 percent less than in 1989. Deficiency payments received in 1990 are projected to be lower than last year for all crops except wheat. Wheat prices have been falling since harvest. Since the Midwest and West usually receive the largest shares of wheat deficiency payments, slightly more than 50 percent and 25 percent, direct payments are not expected to drop as sharply in those regions. In the West, direct payments are currently forecast to be up more than 15 percent from last year.

Regional income is forecast up more than 15 percent in the Midwest and Southeast, but less than 5 percent in the West and South Central regions. Net cash incomes should also be up for most farm types. Fruit and vegetable operations and nurseries and greenhouses, however, could see incomes off slightly.

Table 3--Regional comparisons show across-the-board improvements

	Cash receipts		Government payments	Cash expenses	Gross cash income	Net cash income
	Crops	Livestock				
	Billion dollars					
1987						
Northeast	3.5	6.4	0.3	6.4	10.5	4.0
Midwest	24.9	33.8	10.5	46.5	71.4	24.9
Southeast	10.7	11.1	1.2	15.2	24.1	8.8
South Central	7.1	11.8	2.7	15.7	22.8	7.0
West	19.4	12.9	2.1	24.0	35.6	11.6
1988						
Northeast	3.8	6.5	.2	6.8	10.8	4.0
Midwest	25.7	33.8	9.4	47.6	71.0	23.4
Southeast	12.0	11.6	.9	16.1	25.6	9.6
South Central	8.8	12.8	2.2	16.6	24.9	8.3
West	21.1	14.1	1.7	24.9	38.1	13.2
1989						
Northeast	4.0	7.1	.2	7.5	11.5	4.0
Midwest	27.4	35.1	6.0	52.7	71.4	18.7
Southeast	12.9	12.8	.8	17.7	27.7	10.0
South Central	8.6	13.8	2.5	17.9	26.4	8.5
West	22.6	14.8	1.4	27.0	40.4	13.4
1990F						
Northeast	4.1	7.8	.2	8.0	12.5	4.5
Midwest	30.6	38.8	5.4	54.7	76.8	22.0
Southeast	13.4	13.5	.6	17.4	29.1	11.8
South Central	9.8	14.1	1.7	17.8	26.6	8.8
West	22.8	15.4	1.6	27.3	41.0	13.7

F = forecast.

Table 4--Net cash incomes are up for most farm types

Farm type	Gross cash income		Cash expenses		Net cash income	
	1989	1990F	1989	1990F	1989	1990F
	Billion dollars					
Cash grain	40.7	43	31.3	32	9.4	11
Cotton	5.3	6	2.9	3	2.4	3
Tobacco	2.7	3	2.1	2	.6	1
Fruit-veg.	18.0	18	5.3	5	12.6	12
Other crops	8.4	9	7.6	8	.8	1
Nursery	7.5	8	4.4	4	3.1	3
All crop farms	82.6	86	53.7	55	28.9	31
Red meat	51.5	54	44.6	45	7.0	9
Dairy	23.4	25	18.2	18	5.2	6
Other livestock	4.3	4	2.8	3	1.5	2
All lvstk. farms	94.9	100	69.1	70	25.8	30

F = forecast.

Farm Assets and Equity Continue Climbing

With continued strong land values, farm asset values are rising. Debt is relatively steady, so 1990 balance sheets are showing healthy net worths.

The continuing improvement in the financial position of U.S. agriculture is reflected in rising farm asset and equity values. Farm real estate assets are forecast to increase 2 to 4 percent in 1990 while farm debt is expected to fall $1 to $2 billion. Farm equity is likely to rebound further to between $685 and $695 billion by the end of 1990.

Farm Asset Growth

The value of U.S. agricultural assets (excluding operator households) on December 31, 1990 is forecast at $810 to $820 billion, up 2 to 4 percent over the previous year. The increase is due mostly to rising farm real estate values. Real estate values have been revised to reflect recent data on farm buildings from the Agricultural Economics Land Ownership Survey (AELOS) and the Farm Costs and Returns Survey (FCRS).

Nonreal estate assets are expected to increase 2 to 3 percent in 1990. Livestock and poultry inventory values are expected to rise to $70 to $74 billion. The farm value of machinery and equipment rose about $3 billion in 1989, and is expected to rise another $2 to $3 billion in 1990. The value of crop inventories rose slightly to $23.5 billion in 1989 and will probably rise another 2 percent in 1990. Farm financial assets are expected to remain at about $37 billion through the end of 1990.

Farm Debt Down Slightly

Farmers Home Administration (FmHA) loan balances fell $2.9 billion in 1989, more than offsetting the $400 million increase in debt held by all other lenders. FmHA debt should decrease another $4 billion in 1990, as the agency continues to work through its problem-loan portfolio. Both farmers and lenders can be expected to maintain a conservative attitude toward debt-financed expansion, as uncertainty about future energy costs and interest rates dampen demand for new loans.

Real Estate Debt Down, Other Debt Up Slightly in 1990

Real estate debt declined almost 4 percent in 1989, and is forecast to fall another 2 percent by the end of 1990. While FmHA debt is being reduced, other real estate lenders are anticipated to increase loan volume slightly. Life insurance company (LIC) farm loans increased 3 percent in 1989, the first annual increase in LIC debt since 1981. Several life insurance companies anticipate active participation in Farmer Mac and are expected to increase lending efforts. Nevertheless, life insurance company debt is forecast to decrease 2 percent in 1990.

Nonreal estate debt should be relatively stable through the end of 1990. Excluding the anticipated FmHA decrease, loan balances held by other lenders are expected to rise more than 4 percent. While farmers' improved financial position has lessened the demand for most nonreal estate loans, farm input suppliers, particularly cooperatives, appear to be offering purchasers favorable terms. Also, a significant increase in machinery purchases would likely raise the demand for loans from commercial banks, Production Credit Associations, and individuals and others through farm machinery financing corporations.

Equity, Returns, and Cash Flow

Farm equity is expected to be up 3 to 4 percent in 1990, marking the fourth year of increase. Real farm equity (measured in 1982 dollars) is forecast to fall slightly in 1990.

Rising farm sector asset values, returns on assets, and cash flow continue to strengthen farmers' financial position and support relatively high returns to farm assets and equity. As 1990 returns to farm assets are forecast to rise at about the same rate as farm real estate values, the rate of return on farm assets from current income is expected to remain between 4 and 5 percent. The rate of return on equity from current income is expected to range from 3 to 4 percent in 1990.

The projected total real rate of return on assets ($ 1982), which includes both returns from current income and returns from real capital gains, is expected to be between 4 and 5 percent in 1990. This reflects modest increases both in land prices and in returns to farm assets. The total real rate of return on equity is also expected to be between 4 and 5 percent.

As the total real return on assets has been rising faster than the real cost of debt, the spread has been rising from negative values since 1984, reaching nearly 2 percent in 1987. However, the spread is expected to be between 0 and -2 percent in 1990. This suggests that debt financing may be somewhat less profitable for the farm sector in 1990.

Cash flow after interest ($ 1982) was about $38 billion in 1989 and is expected to be about $41 to $43 billion in 1990, reflecting somewhat higher expected real gross cash income and lower real gross cash expenses in 1990. This expected increase in net cash income offsets larger interest payments in 1990.

Asset values are forecast up 2 to 4 percent this year, due mainly to rising land values. With debt levels remaining fairly steady, equity should increase. FmHA debt continues to fall while other lenders are increasing loan volume.

Table 5--Nominal balance sheet shows improvement, but in real terms it is off slightly 1/

Year	Current dollars			Deflated dollars ($1982) 2/		
	Assets	Liabilities	Equity	Assets	Liabilities	Equity
	Billion dollars					
1985-87	710.3	149.9	560.4	623.3	131.8	491.6
1988	760.0	131.4	628.6	626.5	108.3	518.2
1989	791	129	662	626	102	524
1990F	810 to 820	125 to 131	685 to 695	615 to 625	94 to 100	518 to 528

F = forecast. 1/ Excludes operator households and CCC commodity loans. 2/ Deflated by the GNP implicit price deflator, 1982 = 100.

Table 6--Debt to most lenders is down this year

Lender	1985	1986	1987	1988	1989	1990F
	Million dollars				Billion dollars	
Real estate	88,612	80,826	74,144	69,693	67	64 to 68
Federal Land Banks	37,405	31,872	27,623	25,511	24	23 to 25
Farmers Home Administration	8,761	8,749	8,546	8,093	7	4 to 7
Life insurance companies	9,741	9,059	8,216	7,907	8	7 to 9
Commercial banks	9,599	10,783	12,294	13,033	14	14 to 16
CCC storage facility	307	123	46	21	1/	1/
Individuals & others	22,800	20,241	17,419	15,128	14	13 to 15
Nonreal estate	77,524	66,563	62,012	61,734	62	60 to 64
Commercial banks	33,738	29,678	27,589	28,309	29	29 to 32
PCAs & FICBs	14,002	10,317	9,384	8,766	9	9 to 11
Farmers Home Administration	14,714	14,425	14,123	12,899	11	7 to 10
Individuals & others	15,070	12,143	10,916	11,760	12	12 to 14
Total debt (excluding CCC)	166,136	147,389	136,156	131,427	129	125 to 131

F = forecast. 1/ Less than $500 million.

Table 7--Rates of return on assets and equity falling in 1990 1/

Year	Returns to assets			Returns to equity		
	Income	Real capital gains	Total	Income	Real capital gains	Total
	Percent					
1985-87	4.1	0.3	4.4	2.4	1.3	3.7
1988	4.5	2.7	7.2	3.2	4.1	7.3
1989	4.9	.8	5.7	3.7	1.8	5.5
1990F	4 to 5	-1 to 0	4 to 5	3 to 4	0 to 1	4 to 5

F = forecast. 1/ Excludes operator households. Totals may not add due to rounding. Returns to assets and equity are calculated using the average of the current and previous years' assets and equity, respectively.

Survey Shows Financial Conditions Continue Improving

USDA's 1989 Farm Costs and Returns Survey finds farm businesses ending the decade on a strong note.

Sixty-three percent of farms surveyed in the 1989 Farm Costs and Returns Survey (FCRS) were in a favorable financial position, up from 57 percent in 1988. These profitable, low-leveraged businesses are able to take advantage of investment or expansion opportunities. Although negative income and high debt caused 5 percent of farms to be categorized as vulnerable, this figure was down from 7 percent in 1988. The improvement in financial performance reflects a resurgence in farm income following 1988's drought, coupled with gains in real estate values over the last 4 years.

Bright Picture for Income, Profit

Farmers enjoyed higher cash earnings in 1989 as a result of increasing commodity receipts, offsetting lower direct Government payments and higher operating expenses. Both average net farm income and net cash income climbed. The increase in average income was widespread across sizes, regions, and production specialty. Income rose most for farms with gross sales below $40,000, for farms located in the Southern Plains, Southeast, and Corn Belt, and for farms specializing in cotton and dairy products. The only reduction in net farm income occurred in the Northern Plains.

A larger share of farms had positive net farm income in 1989 (69 percent) compared with 1988 (64 percent). The share increased for all sizes of farms, with the largest gains in the $20,000-$39,999 economic class (12 percentage points). Regionally, the largest advances were in the Lake States, Corn Belt, Northeast, and Appalachia. The Delta, Northern Plains, Mountain, and Pacific regions saw decreases. Dairy and tobacco operations led all production specialties with 85 percent earning positive net farm income. Farms that specialized in the production of vegetables, fruits or nuts, and "other" field crops were the only farm types that experienced a decline in the share of profitable farms.

Asset Values Rising, Debt Stable

Average debt/asset ratios have been declining since 1986 when they peaked at 0.22. For 1989, the surveyed farmers reported asset values increasing and debt remaining constant. Most of the increase in assets was in real estate values, which represented more than 70 percent of the total. Farm equipment, livestock inventory, and crop inventory were each about $2,000 higher than in 1988. There was a small decline in the value of purchased inputs, while other assets (primarily savings and accounts receivable) fell by 16 percent. Equity increased 15 percent, continuing the recovery from the erosion which took place in the early 1980's.

High-Debt Farms Decrease

The share of farms with debt/asset ratios above 0.40 fell 3 percentage points from 1988. This continues the downward trend begun in 1986 when more than 20 percent of farms showed a high debt/asset ratio. Farms with ratios above 0.40 owed 45 percent of total farm debt, compared with 51 percent in 1988 and 67 percent in 1986. At the other extreme, 48 percent of all U.S. farms ended 1989 with no outstanding liabilities, the same proportion as 1988. Farmers' general reluctance to take on debt stems from experiences of the early 1980's and the availability of internal funds.

The most dramatic decline in the proportion of high-debt farms occurred in the Lake States, Corn Belt, and Pacific regions. The Northeast, Appalachia, Southeast, and Southern Plains had less than 10 percent of farms with debt/asset ratios above 0.40. Cotton, poultry, and dairy farms were more inclined than other production specialties to use debt capital; 70 percent had debt at the end of 1989. The proportion of high-debt farms increased among cotton, and nursery and greenhouse operations.

The incidence of debt is related to farm size. Only 17 percent of the largest surveyed farms (more than $500,000 in gross sales) had no yearend debt, compared with a debt-free share of more than 60 percent among farms with sales below $10,000.

Total farm debt owed by financially vulnerable farms was $13.9 billion in 1989, compared with $20 billion at the end of 1988. This continues the downward trend in debt owed by vulnerable farms, which peaked at $34.2 billion in 1986. Although vulnerable-farm debt fell for most lenders, the largest reductions occurred for Production Credit Associations, Farmers Home Administration, and Federal Land Banks. The largest share of vulnerable-farm debt was owed to commercial banks (43 percent), followed by Farm Credit System lenders (22 percent) and the Farmers Home Administration (19 percent).

> A farm's financial condition was measured by jointly considering the net farm income position (positive or negative) and the amount of debt relative to assets (above or below 0.40). Farms with positive income and low debt are regarded as **favorable**, while those with negative income and low debt are considered in a **marginal income** position. Those with positive income and high debt are characterized as **marginal solvency**, and those with both negative income and high debts are **vulnerable**.

Table 8--Average operating and financial characteristics of U.S. farms by economic class and financial position, 1989

	Economic class			Financial position	
	$250,000 or more	$40,000-$249,999	Less than $40,000	Favorable	Vulnerable
		Percent		Percent	
All surveyed farms	5.9	24.8	69.4	62.8	4.8
Primary occupation farming	96.7	90.9	39.6	59.0	38.1
Favorable	64.5	67.6	60.9		
Marginal income	13.8	15.3	30.8		
Marginal solvency	15.7	12.9	3.4		
Vulnerable	6.1	4.2	4.9		
Cash grain	27.0	33.0	16.4	21.6	26.0
Other crops	26.5	13.3	19.5	18.8	16.7
Beef, hog, sheep	23.5	27.2	52.6	44.3	45.1
Other livestock	23.0	26.6	11.6	15.4	12.2
		Acres per farm		Acres per farm	
Acres owned	1,094	530	120	298	153
Acres operated 1/	2,205	915	165	467	427
		Dollars per farm		Dollars per farm	
Livestock sales	280,077	48,769	4,700	32,592	31,970
+ Crop sales (incl. net CCC loans)	262,740	40,163	3,171	30,384	24,481
+ Government payments	22,124	8,632	787	4,090	5,169
+ Other farm-related income	35,882	7,644	1,366	5,367	5,028
= Gross cash income	600,822	105,208	10,024	72,434	66,648
- Cash expenses	440,716	77,836	11,429	47,760	84,466
= Farm operation net cash farm income	160,106	27,372	-1,405	24,674	-17,818
Net cash income including contractors' share 2/	252,041	37,945	223	34,417	-11,937
Nonfarm income	20,867	17,946	29,508	23,051	31,117
Total assets	1,599,701	609,986	229,896	417,824	257,761
Total debt	269,367	80,326	17,812	28,907	166,657
		Ratio		Ratio	
Ratios:					
Debt/asset	0.17	0.13	0.08	0.07	0.65
Return on assets	.08	.03	-.01	.05	-.09
Cash expenses/gross income	.73	.74	1.14	.66	1.27
Interest/gross cash income	.05	.08	.15	.05	.20

Source: 1989 Farm Costs and Returns Survey, USDA. 1/ Defined as acres owned plus acres rented (excluding AUM land) minus land rented to others. 2/ Farm operator net cash income plus the value of products removed by contractors minus expenses reimbursed to operators.

Despite Oil Price Shock, Continued Growth Likely

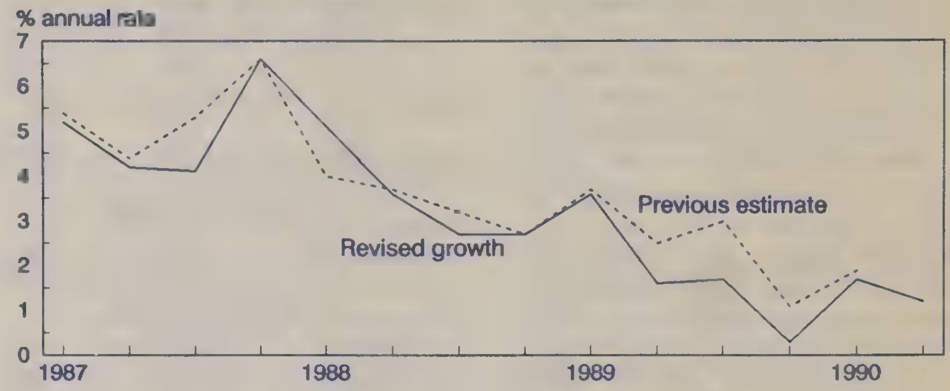
The recent oil price shock will probably slow growth and worsen inflation.

A hindrance to the economy in the immediate future will be the oil price shock, which will increase inflation during the third quarter. The extent of the effects and the severity of the impact will depend on the how long the Middle East crisis continues and how high the price climbs. The inflationary effects are likely to continue even after oil prices have stabilized.

Recent revisions in gross national product (GNP) estimates indicate less strength in the economy than previously assumed. In addition, events in the Middle East are likely to dampen overall demand, so the current outlook is for sluggish growth during the rest of 1990 coupled with higher rates of inflation.

Figure 4

Quarterly GNP Growth Revised Downward



Interest Rates Stabilized in First Half

Interest rates remained relatively flat throughout the second quarter compared with the first-quarter average. The Federal funds rate averaged 8.3 percent in the first half of 1990, 30 basis points below the 1989 fourth-quarter average. The prime rate did not change during the first half of 1990, but stood 50 basis points below the 1989 fourth-quarter average of 10.5. Long-term Treasury bond rates, a measure of inflation expectations, averaged 8.7 percent, about the same as 1989.

During July, the Federal Reserve lowered the Federal funds rate slightly. Board Chairman Alan Greenspan testified before Congress that the action was taken for technical reasons and was not indicative of a weakening economy. He noted that although banks were cautious about committing to new loans and were holding additional resources to meet capital requirements, the economy was not facing a credit crunch.

Food Price Hikes Driving Inflation

During the first half of 1990, inflation was at an annual rate of 5.9 percent, as measured by the Consumer Price Index (CPI). That compares with 3.6 percent for the six months ending in December 1989. Food prices rose moderately during the second half of 1989 but increased at a faster rate between January and June of 1990, reflecting price hikes in meats, poultry, fish and eggs, and fruits and vegetables. Excluding food and energy, the underlying rate of inflation averaged 4.1 percent and 5.7 percent for these six-month periods in 1989 and 1990. Medical-care costs increased about 9 percent during both periods, and apparel and tobacco price advances boosted the CPI for the first half of 1990.

GNP Revisions

In July, the Department of Commerce released revised GNP estimates. Economic growth in the past three years has not been as rapid as previously estimated; growth rates were lower than estimated for most of the 13 previous quarters. While downward revisions in 1987 were not concentrated in one particular area, large downward revisions were made in gross private domestic investment in 1988 and personal consumption expenditures in 1989. Real GNP growth for 1989 dropped from the earlier-reported 3 percent to 2.5 percent, and first-quarter 1990 real GNP growth was revised from an annualized 1.9 percent to 1.7 percent.

Personal income was revised as well. The estimate of disposable personal income fell by $53.3 billion in 1989, causing personal saving as a percentage of disposable personal income to be 4.6 instead of 5.4 percent. Saving was revised downward substantially for the first quarter of 1990 from 5.8 to 4.9 percent, while the second-quarter saving rate was 5.1 percent.

1989 State-level Income and Balance Sheet Estimates

Newly available State-level data will provide more precise information on farm income. Net income was strong in 1989, reflecting a healthy recovery from the 1988 drought.

The first 1989 U.S. and State farm income and balance sheet estimates are now available (previously only forecasts at the national level had been available). The current estimates are "first" estimates, which will be revised over several years as additional data and revisions become available from USDA, and from the Agricultural Census every 5 years. The USDA estimates are benchmarked to the Census estimates, and State data from the 1987 Census are reflected in the estimates. In addition, the results of the Agricultural Economics and Land Ownership Survey (AELOS), an important follow-on survey to the Census conducted in 1988, are now becoming available. ERS is in the process of reconciling data from traditional sources with AELOS data. The balance sheet estimates are in mid-reconciliation, and the estimates presented here should be interpreted in that light. AELOS data will be reflected in the income estimates next year.

The State-level balance sheet components presented here are for the farm business only, and exclude household assets and debts of the farm family. Real estate assets exclude the value of the operators' and other nonlabor dwellings. Real estate debt estimates exclude that portion of reported farm debt attributable to the dwelling. Likewise, nonreal estate assets include only the farm business share of financial assets, and automobiles and trucks.

1989 Continues Financial Recovery

An analysis of farm finances over the 1980's indicates that in 1989, U.S. agriculture was in the fourth year of recovery from the financial crisis that had affected U.S. farmers and ranchers earlier in the decade. During the recovery, farmers restructured individual operations for better cost control, and commodity prices have risen. Both developments helped alleviate the price-cost squeeze that held down farm income earlier in the decade. A low growth rate in both domestic and export demand for feed grains and soybeans had been another contributor to the downturn.

States in the Corn Belt and Delta regions were among those most adversely affected by the financial crisis and have now made a substantial recovery. The decline and subsequent rally in farm income over the decade for Iowa and Nebraska in the Corn Belt, and in Louisiana and Mississippi in the Delta region, illustrate the extent of the crisis and recovery in the farm sector. On the balance sheet side, recent rises in land values have pushed asset values up while debt has been restructured and reduced.

Recovery from the 1988 drought varied by region. Since the Midwestern States were more severely affected than other regions, net farm income in both Corn Belt and Lake States increased on average more than 40 percent in 1989. In the Corn Belt and Lake States, net farm income increases resulted from large advances in gross farm income and relatively small changes in production expenses. A return to normal precipitation levels yielded higher production, increasing both marketings and inventory levels.

Net farm income increased in 34 States, averaging 21.1 percent. For the other 16 States, net farm income decreased an average of 9.8 percent. The States with the largest percentage increases were the ones hit hardest by drought in 1988. North Dakota's net farm income rose by 75 percent from 1988 to 1989. Illinois, Indiana, Iowa, and Minnesota also registered substantial increases.

State Income Rankings Shift

California and Texas remained the top two States in net farm income in 1989, even though net farm income is declining in these States. Florida remained the third-ranking State. Five of 1988's top 10 States fell in the 1989 ranking. Nebraska, North Carolina, Washington, and Minnesota fell within the top 10 rankings. Kansas and Arkansas dropped from the top 10 and were replaced by Wisconsin and Illinois. Corn Belt, Lake, and Northern Plains States generally rose in net farm income rankings while the Southeast, Appalachian, and Delta States' rankings tended to fall. Overall, the top 10 States accounted for $23.6 billion or 50.9 percent of U.S. net farm income, down from 53.5 percent in 1988.

Rankings of net farm income per operation and per acre did not change as dramatically as rankings of total income. Little change occurred since the principal farm-income States (in the Midwest) tend to be lower ranked on a per-operation or per-acre basis. Corn and livestock tend to be associated with low per-operation and low per-acre net farm income. Greenhouse and nursery, and citrus tend to be the opposite. Changes in top 10 States for per-operation net farm income include Idaho (rising from number 12 to 7) and Hawaii (dropping from 8 to 16).

Regionally, both per-operation and per-acre net farm income were highest in the Southeast, Northeast, and Pacific States. This reflects production of specialty crops and poultry in these regions. Appalachian, Delta, Lake, and Corn Belt States tended to have moderate net farm income per operation and per acre. The Northern Plains, Southern Plains, and Mountain States had high income per operation and low income per acre, indicative of large operations with low-value products on a per-acre basis.

Table 9--State rankings for net farm income: total, per farming operation and per acre, 1989

	Total		Per operation		Per acre	
Rank	State	Value ($1000)	State	Value (dollars)	State	Value (dollars)
1	California	5,956,372	Arizona	71,617	Rhode Island	666
2	Texas	2,914,378	California	70,909	Delaware	348
3	Florida	2,613,785	Delaware	68,458	Connecticut	302
4	Iowa	2,520,211	Florida	63,751	New Jersey	282
5	Illinois	2,142,922	Rhode Island	63,116	Florida	233
6	Nebraska	2,078,713	Washington	38,397	Massachusetts	227
7	Minnesota	1,995,580	Idaho	37,518	California	190
8	Wisconsin	1,893,465	Nebraska	36,469	Maryland	172
9	North Carolina	1,544,793	Colorado	34,993	North Carolina	154
10	Washington	1,459,077	Connecticut	33,215	Pennsylvania	125
11	Arkansas	1,290,843	New Jersey	29,910	Wisconsin	108
12	Georgia	1,221,726	Nevada	28,447	Georgia	97
13	Kentucky	1,120,899	Arkansas	26,893	New York	96
14	Kansas	1,096,105	Georgia	25,453	Washington	91
15	Indiana	1,025,729	Maryland	25,352	Maine	87
16	Pennsylvania	1,021,846	Illinois	24,918	Arkansas	82
17	Oklahoma	970,529	Hawaii	24,763	Kentucky	79
18	Colorado	944,823	Iowa	24,002	Alabama	78
19	Oregon	887,635	Oregon	23,990	Iowa	75
20	Alabama	831,087	North Carolina	23,766	Illinois	75
21	Idaho	829,157	Wisconsin	23,376	New Hampshire	73
22	South Dakota	817,902	South Dakota	23,369	Vermont	72
23	Ohio	817,755	Massachusetts	22,369	South Carolina	71
24	New York	807,035	Minnesota	22,173	Hawaii	67
25	Missouri	716,594	New Mexico	21,640	Minnesota	67
26	Michigan	682,661	New York	20,693	Michigan	63
27	Mississippi	632,116	Pennsylvania	18,923	Indiana	63
28	Arizona	580,100	Alabama	17,683	Virginia	62
29	Louisiana	568,910	Montana	17,298	Louisiana	61
30	North Dakota	557,843	Maine	17,202	Idaho	61
31	Virginia	555,016	Louisiana	16,733	Ohio	52
32	Tennessee	439,174	North Dakota	16,652	Oregon	50
33	Montana	427,253	Kansas	15,886	Mississippi	48
34	Maryland	395,485	Vermont	15,694	Nebraska	44
35	South Carolina	374,689	Texas	15,669	Tennessee	35
36	New Mexico	302,960	Alaska	15,450	Oklahoma	29
37	New Jersey	248,251	Mississippi	15,417	Colorado	28
38	Delaware	205,375	South Carolina	14,694	Missouri	24
39	Utah	175,031	Indiana	14,447	Kansas	23
40	Massachusetts	154,344	Oklahoma	13,865	Texas	22
41	Connecticut	132,860	Utah	13,464	South Dakota	18
42	Maine	125,575	Michigan	12,412	Arizona	16
43	Hawaii	115,150	New Hampshire	12,005	Utah	15
44	Vermont	109,861	Virginia	11,809	North Dakota	14
45	Nevada	71,118	Kentucky	11,799	West Virginia	10
46	Rhode Island	48,599	Ohio	9,509	Alaska	9
47	Wyoming	38,374	Missouri	6,574	Nevada	8
48	New Hampshire	37,215	Tennessee	4,826	Montana	7
49	West Virginia	36,545	Wyoming	4,312	New Mexico	7
50	Alaska	9,270	West Virginia	1,740	Wyoming	1
	United States	46,542,736	United States	21,443	United States	47

Table 10--Net farm income for States, 1988-89

State	1988 Gross farm income	1988 Total production expenses	1988 Net farm income	1989 Gross farm income	1989 Total production expenses	1989 Net farm income
	1,000 dollars					
Alabama	2,776,630	1,997,839	778,791	2,989,062	2,157,975	831,087
Alaska	32,038	19,979	12,059	29,794	20,524	9,270
Arizona	2,122,084	1,475,354	646,730	2,098,749	1,518,649	580,100
Arkansas	4,459,577	3,210,898	1,248,679	4,809,550	3,518,707	1,290,843
California	17,922,491	11,781,667	6,140,824	18,891,372	12,935,000	5,956,372
Colorado	4,415,082	3,575,248	839,834	4,537,643	3,592,820	944,823
Connecticut	427,236	284,982	142,254	434,642	301,782	132,860
Delaware	633,936	450,178	183,758	698,903	493,528	205,375
Florida	6,086,602	3,485,862	2,600,740	6,435,100	3,821,315	2,613,785
Georgia	3,990,711	2,878,625	1,112,086	4,339,371	3,117,645	1,221,726
Hawaii	604,639	461,028	143,611	606,043	490,893	115,150
Idaho	2,711,860	2,082,480	629,380	3,077,883	2,248,726	829,157
Illinois	7,551,980	6,387,144	1,164,836	9,358,689	7,215,767	2,142,922
Indiana	4,622,416	4,099,128	523,288	5,484,115	4,458,386	1,025,729
Iowa	10,629,778	8,529,038	2,100,740	11,765,235	9,245,024	2,520,211
Kansas	7,570,320	6,129,834	1,440,486	7,620,600	6,524,495	1,096,105
Kentucky	3,113,898	2,225,490	888,408	3,610,522	2,489,623	1,120,899
Louisiana	2,115,198	1,434,926	680,272	2,085,119	1,516,209	568,910
Maine	472,054	373,065	98,989	522,307	396,732	125,575
Maryland	1,399,845	1,022,579	377,266	1,500,333	1,104,848	395,485
Massachusetts	463,236	303,335	159,901	482,776	328,432	154,344
Michigan	3,110,875	2,720,163	390,712	3,644,739	2,962,078	682,661
Minnesota	7,032,396	5,510,686	1,521,710	8,005,478	6,009,898	1,995,580
Mississippi	2,769,740	2,005,138	764,602	2,793,307	2,161,191	632,116
Missouri	4,401,761	3,717,059	684,702	4,750,489	4,033,895	716,594
Montana	1,754,652	1,568,525	186,127	2,154,779	1,727,526	427,253
Nebraska	9,562,738	7,486,916	2,075,822	10,121,059	8,042,346	2,078,713
Nevada	257,977	209,349	48,628	298,841	227,723	71,118
New Hampshire	161,329	111,891	49,438	158,475	121,260	37,215
New Jersey	728,287	482,130	246,157	767,440	519,189	248,251
New Mexico	1,432,183	1,167,337	264,846	1,570,293	1,267,333	302,960
New York	2,948,279	2,282,591	665,688	3,277,389	2,470,354	807,035
North Carolina	4,870,798	3,507,112	1,363,686	5,346,567	3,801,774	1,544,793
North Dakota	2,648,304	2,300,895	347,409	3,060,412	2,502,569	557,843
Ohio	4,078,012	3,429,553	648,459	4,571,511	3,753,756	817,755
Oklahoma	4,054,378	3,099,272	955,106	4,270,554	3,300,025	970,529
Oregon	2,574,071	1,709,631	864,440	2,760,432	1,872,797	887,635
Pennsylvania	3,563,251	2,735,863	827,388	3,999,673	2,977,827	1,021,846
Rhode Island	90,380	40,340	50,040	91,596	42,997	48,599
South Carolina	1,287,002	959,839	327,163	1,407,601	1,032,912	374,689
South Dakota	3,231,504	2,555,763	675,741	3,528,662	2,710,760	817,902
Tennessee	2,425,790	1,925,004	500,786	2,430,376	1,991,202	439,174
Texas	12,576,406	9,445,963	3,130,443	12,892,563	9,978,185	2,914,378
Utah	808,960	618,846	190,114	811,140	636,109	175,031
Vermont	456,567	342,379	114,188	482,195	372,334	109,861
Virginia	2,316,062	1,782,181	533,881	2,485,212	1,930,196	555,016
Washington	3,938,383	2,662,348	1,276,035	4,328,719	2,869,642	1,459,077
West Virginia	387,048	335,169	51,879	417,550	381,005	36,545
Wisconsin	5,414,313	4,128,260	1,286,053	6,523,675	4,630,210	1,893,465
Wyoming	819,429	737,710	81,719	789,198	750,824	38,374
United States	173,822,486	131,786,592	42,035,894	189,117,733	142,574,997	46,542,736

Table 11--Farm marketings, 1988 and 1989, Government payments, 1989, and principal commodities, 1989, by State

State	1988 Farm marketings Total	1988 Farm marketings Crops	1988 Farm marketings Livestock and products	1989 Farm marketings Total	1989 Farm marketings Crops	1989 Farm marketings Livestock and products	1989 Government payments	State rank for total farm marketings, four principal commodities in order of marketing receipts and percentage of total marketings
	1,000 dollars							
AL	2,422,328	727,686	1,694,642	2,627,670	695,506	1,932,164	120,859	25-Broilers, cattle, eggs, peanuts (69%)
AK	30,128	20,198	9,930	28,632	19,817	8,815	1,143	50-Greenhouse, dairy prod, hay, potatoes (82%)
AZ	1,968,560	1,176,873	791,687	1,902,460	1,158,261	744,199	85,106	31-Cattle, cotton, dairy prod, lettuce (64%)
AR	3,831,380	1,551,698	2,279,682	4,131,042	1,470,176	2,660,866	439,675	17-Broilers, soybeans, rice, cattle (67%)
CA	16,651,568	11,969,628	4,681,940	17,514,795	12,422,046	5,092,749	372,090	1-Dairy prod, cattle, greenhouse, grapes (39%)
CO	3,699,885	1,034,111	2,665,774	3,898,614	1,249,557	2,649,057	183,442	16-Cattle, wheat, corn, dairy prod (80%)
CT	397,741	214,465	183,276	404,360	218,060	186,300	2,200	44-Eggs, greenhouse, dairy prod, tobacco (76%)
DE	595,191	151,654	443,537	662,568	159,619	502,949	4,818	41-Broilers, soybeans, corn, greenhouse (82%)
FL	5,819,668	4,687,549	1,132,119	6,202,954	4,982,354	1,220,600	38,323	9-Greenhouse, oranges, tomatoes, sugar (51%)
GA	3,569,538	1,553,763	2,015,775	3,868,531	1,598,141	2,270,390	173,058	14-Broilers, peanuts, eggs, cattle (60%)
HI	578,897	490,277	88,620	586,934	494,982	91,952	267	38-Sugar, pineapples, greenhouse, nuts (74%)
ID	2,324,460	1,285,380	1,039,080	2,715,312	1,669,802	1,045,510	99,089	26-Cattle, dairy prod, potatoes, wheat (64%)
IL	6,182,225	3,927,100	2,255,125	6,710,436	4,458,464	2,251,972	725,941	5-Corn, soybeans, hogs, cattle (90%)
IN	4,036,261	2,320,256	1,716,005	4,318,493	2,501,584	1,816,909	333,691	10-Corn, hogs, soybeans, cattle (75%)
IA	8,774,969	3,787,193	4,987,776	9,119,202	3,910,522	5,208,680	981,206	2-Hogs, corn, cattle, soybeans (92%)
KS	6,319,703	2,195,389	4,124,314	6,324,292	2,078,981	4,245,311	588,446	7-Cattle, wheat, sorghum grain, corn (83%)
KY	2,509,516	979,590	1,529,926	2,928,062	1,257,742	1,670,320	118,423	23-Tobacco, horses, cattle, dairy prod (70%)
LA	1,876,454	1,294,525	581,929	1,661,437	1,047,694	613,743	249,758	32-Soybeans, cotton, cattle, sugar (50%)
ME	414,176	197,489	216,687	447,383	232,742	214,641	7,143	45-Dairy prod, potatoes, eggs, cattle (75%)
MD	1,224,339	456,736	767,603	1,346,228	476,367	869,861	23,735	34-Broilers, dairy prod, greenhouse, cattle (71%)
MA	409,928	305,295	104,633	428,892	316,779	112,113	3,863	42-Greenhouse, cranberries, dairy prod, eggs (75%)
MI	2,739,381	1,534,589	1,204,792	2,940,387	1,627,449	1,312,938	261,971	19-Dairy prod, corn, cattle, hogs (56%)
MN	6,066,701	2,649,046	3,417,655	6,525,541	2,809,080	3,716,461	599,852	6-Dairy prod, corn, cattle, hogs (65%)
MS	2,304,852	1,132,802	1,172,050	2,291,761	1,000,023	1,291,738	325,161	28-Broilers, cotton, soybeans, cattle (69%)
MO	3,757,664	1,746,152	2,011,512	3,900,434	1,732,009	2,168,425	356,391	13-Soybeans, cattle, hogs, corn (71%)
MT	1,432,966	616,704	816,262	1,609,736	710,482	899,254	289,382	33-Cattle, wheat, barley, hay (85%)
NE	7,799,582	2,409,260	5,390,322	8,521,087	2,878,449	5,642,638	542,306	4-Cattle, corn, hogs, soybeans (87%)
NV	237,998	78,872	159,126	235,109	94,055	141,054	6,301	46-Cattle, hay, dairy prod, potatoes (89%)
NH	136,120	77,436	58,684	142,085	78,748	63,337	2,302	48-Dairy prod, greenhouse, apples, cattle (77%)
NJ	644,581	452,040	192,541	660,078	462,769	197,309	21,483	37-Greenhouse, dairy prod, eggs, peaches (49%)
NM	1,[illegible],132	374,528	908,604	1,423,759	449,663	974,096	64,675	35-Cattle, dairy prod, hay, chili peppers (74%)
NY	2,668,132	865,499	1,802,633	2,856,650	911,132	1,945,518	76,025	21-Dairy prod, greenhouse, cattle, eggs (74%)
NC	4,037,795	1,850,167	2,187,628	4,550,587	2,046,063	2,504,524	93,917	11-Tobacco, broilers, hogs, turkeys (57%)
ND	2,358,232	1,507,398	850,834	2,107,575	1,465,427	642,148	474,846	24-Wheat, cattle, barley, sunflower (69%)
OH	3,563,523	1,979,660	1,583,863	3,812,118	2,114,380	1,697,738	274,003	12-Corn, soybeans, dairy prod, hogs (68%)
OK	3,354,415	1,111,886	2,242,529	3,594,261	1,185,277	2,408,984	234,817	20-Cattle, wheat, dairy prod, broilers (78%)
OR	2,181,559	1,508,477	673,082	2,297,095	1,557,620	739,475	60,384	29-Cattle, greenhouse, dairy prod, wheat (47%)
PA	3,295,551	963,662	2,331,889	3,581,168	985,791	2,595,377	68,396	15-Dairy prod, cattle, greenhouse, eggs (68%)
RI	79,072	65,732	13,340	79,022	66,150	12,872	90	49-Greenhouse, dairy prod, eggs, potatoes (67%)
SC	1,106,007	615,714	490,293	1,225,491	674,571	550,920	72,696	36-Tobacco, cattle, soybeans, dairy prod (43%)
SD	2,944,782	895,056	2,049,726	2,992,072	883,954	2,108,118	340,262	22-Cattle, hogs, corn, wheat (73%)
TN	1,932,702	876,954	1,055,748	1,920,550	860,628	1,059,922	141,049	27-Cattle, dairy prod, greenhouse, soybeans (57%)
TX	10,251,368	3,689,338	6,562,030	10,760,414	3,897,010	6,863,404	1,248,713	3-Cattle, cotton, dairy prod, greenhouse (69%)
UT	701,250	173,025	528,225	748,188	173,933	574,255	34,536	39-Cattle, dairy prod, turkeys, hay (71%)
VT	401,222	50,603	350,619	425,541	51,005	374,536	7,064	43-Dairy prod, cattle, hay, apples (93%)
VA	1,913,993	614,333	1,299,660	2,057,820	685,423	1,372,397	38,599	30-Cattle, dairy prod, broilers, turkeys (57%)
WA	3,336,153	2,196,242	1,139,911	3,638,971	2,437,817	1,201,154	131,132	18-Dairy prod, cattle, apples, wheat (56%)
WV	285,930	68,179	217,751	313,961	64,115	249,846	11,599	47-Dairy prod, broilers, apples, cattle (70%)
WI	4,979,643	764,405	4,215,238	5,277,971	940,548	4,337,423	522,332	8-Dairy prod, cattle, corn, hogs (85%)
WY	761,204	176,995	584,209	855,570	186,353	669,217	34,142	40-Cattle, sheep, sugar beets, hay (86%)
US	150,192,425	71,371,609	78,820,816	159,173,299	75,449,120	83,724,179	10,886,702	Cattle, dairy prod, corn, hogs (52%)

Table 12--Value of farm business assets (excluding households), by State, December 31, 1989

State	Real estate		Nonreal estate			Financial assets		Total assets
	Land	Farm buildings	Livestock and poultry	Machinery and motor vehicles	Crops	Other financial assets	Investments in cooperatives	
	Million dollars							
Alabama	6,443	1,223	983	1,145	129	155	420	10,498
Alaska	186	17	6	22	0	7	258	495
Arizona	8,857	268	520	426	50	61	158	10,340
Arkansas	9,335	830	1,022	1,595	178	213	610	13,783
California	40,733	4,558	3,753	3,900	364	888	1,544	55,739
Colorado	9,315	1,140	2,287	1,261	464	161	484	15,111
Connecticut	1,252	333	68	140	23	32	46	1,893
Delaware	978	108	29	151	31	16	49	1,363
Florida	19,757	1,165	1,104	1,346	47	233	775	24,426
Georgia	9,995	1,206	934	1,470	200	236	1,229	15,272
Hawaii	2,766	194	89	181	0	38	26	3,293
Idaho	7,229	804	1,098	1,164	816	106	223	11,439
Illinois	33,127	2,528	1,694	4,942	2,109	446	1,154	46,002
Indiana	15,075	2,210	1,172	2,980	1,155	290	1,013	23,897
Iowa	30,350	2,083	4,196	5,233	2,481	410	1,649	46,403
Kansas	18,564	1,759	4,068	3,280	601	274	691	29,237
Kentucky	8,467	2,174	1,467	2,053	754	309	617	15,840
Louisiana	6,866	692	606	1,265	117	161	-314	9,393
Maine	766	246	94	264	134	27	52	1,582
Maryland	3,538	831	276	657	141	78	185	5,707
Massachusetts	1,508	438	59	208	21	39	105	2,379
Michigan	7,352	1,491	984	2,384	456	244	433	13,343
Minnesota	17,827	2,371	2,310	4,731	1,812	333	1,641	31,026
Mississippi	7,905	1,012	749	1,349	171	172	633	11,992
Missouri	15,326	2,637	2,881	2,896	939	417	1,006	26,102
Montana	12,200	817	1,676	1,415	655	132	282	17,177
Nebraska	23,126	996	4,145	3,161	1,402	279	594	33,703
Nevada	1,412	157	330	124	56	24	38	2,141
New Hampshire	672	213	36	102	14	11	-73	976
New Jersey	2,593	562	64	296	29	89	96	3,729
New Mexico	7,890	333	899	437	87	73	231	9,950
New York	3,220	1,405	1,291	1,805	455	189	494	8,859
North Carolina	9,121	1,702	729	1,864	240	249	656	14,560
North Dakota	11,474	793	1,213	2,449	891	182	1,287	18,288
Ohio	13,049	2,429	1,318	3,280	867	433	970	22,346
Oklahoma	13,309	1,777	3,010	1,917	280	317	581	21,192
Oregon	7,658	1,271	898	1,325	220	201	379	11,952
Pennsylvania	10,237	1,625	1,539	2,121	678	202	546	16,949
Rhode Island	226	35	6	26	2	5	10	309
South Carolina	3,476	636	343	752	109	106	450	5,871
South Dakota	12,753	677	2,400	1,816	879	151	467	19,142
Tennessee	8,910	2,007	1,304	1,948	387	347	674	15,576
Texas	52,871	6,758	8,589	5,324	837	1,176	1,634	77,189
Utah	3,532	437	615	438	108	56	-13	5,172
Vermont	1,001	269	245	309	65	30	66	1,985
Virginia	9,776	1,558	992	1,341	310	227	463	14,667
Washington	9,584	1,119	941	1,645	379	199	404	14,271
West Virginia	1,459	389	274	346	91	70	35	2,665
Wisconsin	7,324	2,152	3,435	4,128	1,095	286	1,038	19,456
Wyoming	4,513	306	916	384	148	49	143	6,458
U.S. Total	514,901	62,744	69,653	83,794	23,479	10,428	26,138	791,137

Note: Totals may not add due to rounding.

Table 13--Real estate debt outstanding (excluding households), by State and lender, December 31, 1989

State	Federal Land Banks	Farmers Home Administration	Life insurance companies	Commercial banks	CCC storage facility	Individuals and others	Total
	Million dollars						
Alabama	289	90	45	193	0.15	97	714
Alaska	6	0	7	3	.00	4	20
Arizona	111	58	159	173	.00	129	630
Arkansas	362	240	226	372	.34	167	1,367
California	2,412	199	1,798	681	.08	1,109	6,198
Colorado	633	100	186	154	.23	316	1,391
Connecticut	39	12	1	19	.00	13	83
Delaware	57	11	1	32	.01	18	119
Florida	723	102	692	599	.23	294	2,409
Georgia	577	162	126	433	.26	142	1,441
Hawaii	114	28	29	26	.00	9	206
Idaho	463	212	143	26	.34	285	1,129
Illinois	1,335	282	400	1,184	.64	783	3,985
Indiana	822	231	240	650	.21	651	2,593
Iowa	1,308	371	477	1,036	1.17	1,726	4,920
Kansas	945	241	210	544	.07	383	2,323
Kentucky	[illegible]	211	107	474	.10	214	1,293
Louisiana	311	132	137	149	.41	87	817
Maine	27	43	0	5	.04	12	87
Maryland	222	34	9	116	.02	95	477
Massachusetts	24	19	18	11	.00	14	85
Michigan	615	149	31	172	.44	309	1,277
Minnesota	1,217	253	176	566	1.78	883	3,096
Mississippi	418	257	199	281	.20	143	1,299
Missouri	557	325	192	785	.25	521	2,381
Montana	539	172	187	107	.10	495	1,500
Nebraska	846	338	363	600	.37	582	2,730
Nevada	72	18	39	2	.00	47	179
New Hampshire	12	7	0	2	.00	7	29
New Jersey	96	19	1	24	.01	56	196
New Mexico	191	64	65	113	.00	132	565
New York	244	93	6	116	.26	131	590
North Carolina	611	220	73	269	.02	141	1,314
North Dakota	683	293	31	231	.22	266	1,504
Ohio	552	153	111	492	.24	339	1,647
Oklahoma	700	310	100	321	.07	320	1,751
Oregon	471	109	407	75	.04	472	1,534
Pennsylvania	371	109	11	353	.03	184	1,028
Rhode Island	6	2	0	3	.00	1	12
South Carolina	287	80	12	49	.04	49	475
South Dakota	404	351	48	150	.50	329	1,283
Tennessee	264	215	37	336	.24	136	988
Texas	1,654	347	502	876	.11	935	4,314
Utah	147	55	11	31	.13	124	368
Vermont	45	35	0	34	.03	23	137
Virginia	508	80	60	194	.12	123	965
Washington	447	138	272	154	.20	319	1,330
West Virginia	62	39	83	49	.00	19	252
Wisconsin	559	196	43	498	1.84	416	1,714
Wyoming	81	45	75	25	.02	116	343
U.S. Total	23,728	7,249	8,145	13,790	11.58	14,166	67,089

Note: Totals may not add due to rounding.

Table 14--Nonreal estate debt outstanding (excluding households), by State and lender, December 31, 1989

State	Commercial banks	PCA's and FICB's	Farmers Home Administration	Individuals and others	Total	CCC commodity loans
	Million dollars					
Alabama	200	133	120	204	658	15
Alaska	7	0	0	2	9	0
Arizona	469	165	133	152	918	47
Arkansas	471	147	373	301	1,292	303
California	2,504	1,206	544	1,026	5,281	348
Colorado	705	184	96	412	1,397	75
Connecticut	29	47	[illegible]	24	107	0
Delaware	24	38	6	53	122	2
Florida	243	222	185	268	918	1
Georgia	295	152	537	273	1,257	19
Hawaii	29	25	11	28	93	0
Idaho	566	107	168	189	1,029	59
Illinois	1,872	182	236	524	2,814	420
Indiana	885	190	224	365	1,664	161
Iowa	2,603	174	443	788	4,008	692
Kansas	1,886	141	179	665	2,871	75
Kentucky	378	193	206	174	951	26
Louisiana	242	131	548	130	1,052	113
Maine	30	60	71	37	198	0
Maryland	44	172	23	111	350	6
Massachusetts	49	60	12	24	145	0
Michigan	372	328	259	227	1,186	85
Minnesota	1,555	510	414	530	3,009	599
Mississippi	321	119	682	175	1,298	243
Missouri	986	150	346	319	1,800	104
Montana	489	78	273	117	958	100
Nebraska	2,152	116	263	777	3,309	531
Nevada	16	32	12	19	79	0
New Hampshire	1	20	4	10	34	0
New Jersey	13	60	27	36	135	1
New Mexico	181	76	51	124	431	8
New York	382	354	232	208	1,176	28
North Carolina	243	303	202	342	1,090	18
North Dakota	738	310	483	190	1,721	220
Ohio	514	256	205	305	1,280	88
Oklahoma	1,151	141	448	276	2,015	26
Oregon	325	121	100	139	685	45
Pennsylvania	270	319	118	277	985	3
Rhode Island	2	7	2	3	13	0
South Carolina	64	64	180	90	397	9
South Dakota	952	107	451	224	1,735	157
Tennessee	216	210	279	193	898	50
Texas	2,420	858	878	948	5,103	350
Utah	118	90	33	56	298	3
Vermont	32	60	19	36	147	0
Virginia	181	261	143	160	746	4
Washington	908	50	112	219	1,290	88
West Virginia	20	36	22	28	106	1
Wisconsin	887	674	437	397	2,395	98
Wyoming	204	49	43	75	372	3
U.S. Total	29,243	9,490	10,843	12,250	61,826	5,225

Note: Totals may not add due to rounding.

Table 15--Farm balance sheet components (excluding households), by State, December 31, 1989

State	Assets			Liabilities			Proprietors' equity	Debt-to-asset ratio
	Real estate	Nonreal estate	Total	Real estate	Nonreal estate	Total		
	Million dollars							Ratio
Alabama	7,666	2,832	10,498	714	658	1,372	9,126	13.1
Alaska	203	292	495	20	9	30	465	6.0
Arizona	9,125	1,215	10,340	630	918	1,548	8,792	15.0
Arkansas	10,166	3,617	13,783	1,367	1,292	2,659	11,124	19.3
California	45,291	10,448	55,739	6,198	5,281	11,480	44,259	20.6
Colorado	10,455	4,657	15,111	1,391	1,397	2,787	12,324	18.4
Connecticut	1,584	309	1,893	83	107	191	1,702	10.1
Delaware	1,086	277	1,363	119	122	242	1,122	17.7
Florida	20,922	3,504	24,426	2,409	918	3,327	21,099	13.6
Georgia	11,202	4,070	15,272	1,441	1,257	2,699	12,573	17.7
Hawaii	2,960	333	3,293	206	93	300	2,993	9.1
Idaho	8,034	3,405	11,439	1,129	1,029	2,157	9,282	18.9
Illinois	35,656	10,346	46,002	3,985	2,814	6,799	39,203	14.8
Indiana	17,286	6,611	23,897	2,593	1,664	4,258	19,639	17.8
Iowa	32,433	13,970	46,403	4,920	4,008	8,928	37,474	19.2
Kansas	20,323	8,914	29,237	2,323	2,871	5,194	24,044	17.8
Kentucky	10,641	5,199	15,840	1,293	951	2,245	13,595	14.2
Louisiana	7,558	1,835	9,393	817	1,052	1,869	7,524	19.9
Maine	1,012	570	1,582	87	198	285	1,298	18.0
Maryland	4,370	1,337	5,707	477	350	827	4,880	14.5
Massachusetts	1,946	433	2,379	85	145	230	2,149	9.7
Michigan	8,844	4,500	13,343	1,277	1,186	2,463	10,880	18.5
Minnesota	20,198	10,828	31,026	3,096	3,009	6,105	24,921	19.7
Mississippi	8,917	3,075	11,992	1,299	1,298	2,597	9,395	21.7
Missouri	17,963	8,139	26,102	2,381	1,800	4,181	21,922	16.0
Montana	13,017	4,160	17,177	1,500	958	2,458	14,719	14.3
Nebraska	24,121	9,582	33,703	2,730	3,309	6,038	27,665	17.9
Nevada	1,569	572	2,141	179	79	258	1,883	12.0
New Hampshire	885	91	976	29	34	63	912	6.5
New Jersey	3,156	574	3,729	196	135	331	3,399	8.9
New Mexico	8,223	1,727	9,950	565	431	996	8,953	10.0
New York	4,625	4,234	8,859	590	1,176	1,766	7,093	19.9
North Carolina	10,823	3,737	14,560	1,314	1,090	2,404	12,156	16.5
North Dakota	12,266	6,022	18,288	1,504	1,721	3,224	15,064	17.6
Ohio	15,478	6,868	22,346	1,647	1,280	2,927	19,419	13.1
Oklahoma	15,086	6,105	21,192	1,751	2,015	3,766	17,425	17.8
Oregon	8,928	3,024	11,952	1,534	685	2,219	9,733	18.6
Pennsylvania	11,862	5,086	16,949	1,028	985	2,013	14,936	11.9
Rhode Island	261	49	309	12	13	24	285	7.9
South Carolina	4,112	1,760	5,871	475	397	873	4,999	14.9
South Dakota	13,430	5,712	19,142	1,283	1,735	3,017	16,125	15.8
Tennessee	10,917	4,659	15,576	988	898	1,886	13,690	12.1
Texas	59,628	17,560	77,189	4,314	5,103	9,418	67,771	12.2
Utah	3,969	1,203	5,172	368	298	666	4,506	12.9
Vermont	1,270	715	1,985	137	147	284	1,701	14.3
Virginia	11,334	3,333	14,667	965	746	1,711	12,956	11.7
Washington	10,702	3,568	14,271	1,330	1,290	2,620	11,650	18.4
West Virginia	1,849	816	2,665	252	106	357	2,308	13.4
Wisconsin	9,476	9,981	19,456	1,714	2,395	4,109	15,347	21.1
Wyoming	4,819	1,639	6,458	343	372	714	5,744	11.1
U.S. Total	577,645	213,492	791,137	67,089	61,826	128,915	662,222	16.3

Note: Totals may not add due to rounding.

Comparing the 1987 Census of Agriculture with USDA's Farm Costs and Returns Survey: The Case of Government Payments

by
Robert McElroy and Gerald Whittaker[1]

Abstract: The 1987 Census of Agriculture and the 1987 Farm Costs and Returns Survey give very similar results in examining Government payments to farmers. While numbers of participating farmers vary between the two surveys, total payments and the distributions of the payments generally agree. Farm numbers from both surveys were lower than the official USDA count as were the total payments made during the year.

Keywords: Government payments, U.S. Census of Agriculture, Farm Costs and Returns Survey

Over the past several years, the U.S. Department of Agriculture (USDA), and the Economic Research Service (ERS) in particular, have become more reliant on the annual Farm Costs and Returns Survey (FCRS) for analyzing the financial condition of U.S. agriculture. The National Agricultural Statistics Service (NASS) designs the FCRS sample; the resulting data are expanded to represent all U.S. farming and ranching operations. The Census of Agriculture, a much larger survey, is conducted every 5 years by the Bureau of the Census.

Newly released 1987 census results can be compared with the FCRS to determine how the results vary between two national data sources. Any number of financial indicators could be used to compare the FCRS and the census. Because of the interest in Government payments during markup of the new farm bill and a recent ERS study examining payments reported by the census,[2] the authors chose payments for a case study.

For both surveys, only data for operations reporting direct payments were analyzed; operations not participating in Government programs were excluded. This study analyzes total payment amounts, absolute farm numbers, and distributions by farm type, payment level, sales class[3] (volume) and organizational structure.

A primary difference in survey design could influence results obtained from the census and the FCRS. The census is a mail questionnaire and respondents are on their own in interpreting its questions. The FCRS is hand enumerated by trained personnel, conceivably allowing less room for misinterpretation. In the case of questions about the amount of Government payments received, self-enumeration should pose few problems. Findings on the distribution of payments, however, could be affected by the differences in the two samples.

The 1987 census was based on lists of known farms. The FCRS sample is a combination of list frame (based on NASS' State-level list of participants in other NASS surveys) and area frame (photographic land segments where all households are interviewed to see if they qualify as a farm). Addition of an area frame picks up many small operations that tend to be absent from list-frame samples. This difference could have some effect on the distribution of payments by size of farm and the average payment per farm if the two data sources have dissimilar numbers and distributions of farms.

The 1987 FCRS provided 12,202 usable questionnaires that expanded to represent 1.677 million farms and ranches. The census shows 2.088 million operations, while the official USDA estimate is 2.213 million. In all three sources, the definition of a farm is the same, so both the census and the FCRS undercounted the total number of farms. The undercount was principally among small operations with sales less than $10,000.

The Agricultural Stabilization and Conservation Service (ASCS), USDA's agency in charge of distributing direct payments, reported $16.7 billion paid out in calendar 1987. The census reported $7 billion less than the ASCS amount, and the FCRS $6 billion less. Payments were made to some 700,000 operations, according to the census, and to 600,000 operations according to the FCRS (table A-1).

Payments reported in the FCRS are for farm operations, and should include the share of payments to operators, partners, and stockholders. The FCRS excludes payments that landlords received, which account for an estimated $2 to $3 billion of the FCRS undercount. The FCRS also excludes payments going to any kind of institutional farm.

It is not clear where the census undercounts payments, but it is likely that payments to landlords and other persons may be underreported in cases where the operators use their own

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[2] Reinsel, Robert D. *The Distribution of Farm Program Payments, 1987*. Agr. Inf. Bull. No. 607, USDA-ERS, June 1990.

[3] Farm type is determined by the product representing more than 50 percent of a farm's gross sales.

Table A-1--Number of farms receiving Government payments, payment amounts, and distribution of farms and payments, by farm type, 1987

Item	Farms receiving payments		Total payments		Farms receiving payments		Total payments	
	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS
	Thousands		Million dollars		Percent			
All farm types 1/	699	597	9,647	10,754	100.0	100.0	100.0	100.0
Cash grain	333	237	5,663	5,229	47.7	39.6	58.7	48.6
Livestock	201	187	1,966	2,752	28.8	31.3	20.4	25.6
Dairy	52	63	441	701	7.4	10.6	4.6	6.5
Other field crops	29	25	287	469	4.1	4.2	3.0	4.4
Cotton	24	20	700	788	3.4	3.4	7.3	7.3
General farms	20	42	276	659	2.9	7.1	2.9	6.1
Tobacco	15	14	51	58	2.2	2.4	.5	.5
Animal specialties and poultry	16	2	184	24	2.3	.4	1.9	.2
Horticulture, vegetables, fruits, and nuts	[illegible]	6	78	75	1.2	1.0	.8	.7

Sources: 1987 Census of Agriculture; 1987 Farm Costs and Returns Survey, NASS. 1/ Farm type is determined by the commodity earning more than 50 percent of total sales.

record books in completing census forms. This also applies to the FCRS.

The FCRS reports a greater-than-25-percent difference from the census in farm numbers for four farm types: cash grains, general farms, animal specialties, and horticulture. Many of these farms tend to be small in economic size, an area where the FCRS is somewhat weak. In terms of total payments, however, the FCRS reported over twice the amount as the census for livestock, dairy, and general farms. Cash-grain farms appear to account for much of the difference between the data sources in farm numbers, but the total payments to them amount to nearly the same for both. Animal specialty and poultry farm payments in the FCRS were only 17 percent of the census amount.

Despite these variations, the total payments for all farm types were remarkably similar, with the FCRS reporting 11 percent more than the census and even closer to the ASCS-reported amount. Although for some farm types the differences in numbers and total payments tend to be large, the distributions of farms receiving payments and of payments themselves are very similar between the two surveys.

With FCRS farm numbers less than the census and total payments more, the per-farm payments reported in the FCRS are higher, showing a difference of $4,217 across all farm types (table A-2). This is best explained by the FCRS' tendency (through its list frame) to favor sampling larger farm and ranch operations than smaller ones. These larger operations tend to be program participants, with a relatively high share receiving payments. The shares receiving payments in each category are very similar between the two surveys.

Table A-2--Average payment per farm and share receiving payments, by farm type, 1987

Item	Average payments per farm		Share of group receiving payments	
	Census	FCRS	Census	FCRS
	Dollars		Percent	
All farm types 1/	13,800	18,017	33.3	35.7
Cash grain	16,986	22,094	72.3	79.0
Livestock	9,760	14,708	22.4	26.0
Dairy	8,482	11,038	38.1	42.5
Other field crops	10,034	18,691	22.9	29.5
Cotton	29,380	39,074	86.8	98.0
General farms	13,619	15,639	34.4	23.9
Tobacco	3,361	4,072	17.2	21.3
Animal specialties and poultry	11,465	10,718	22.6	3.6
Horticulture, vegetables, fruits, and nuts	9,510	13,078	20.8	6.3

Sources: 1987 Census of Agriculture; 1987 Farm Costs and Returns Survey, NASS. 1/ Farm type is determined by the commodity earning more than 50 percent of total sales.

The ranking of farm numbers, total payments, and payments per farm are essentially the same by farm type, regardless of survey. Both surveys report more cash grain, livestock, and dairy farms receiving payments, in that order; all these tend to grow program crops, as table A-2 shows, and they account for most of U.S. acreage. Cash grain and livestock operations account for nearly three-fourths of total payments, again because Government programs target crops primarily grown on these operations. Cotton farms follow as third-highest recipients of payments because of their size and because of a very high participation rate. On a payment-per-farm basis, cotton farms rank highest in both surveys with nearly twice the payments of the next-highest farm type, cash grains.

When operations are grouped by sales volume, the FCRS' undercount of small farms becomes more obvious (table A-3). For the two smallest sales classes, the FCRS reports between 20 and 30 percent fewer participating farms than the census and 20 to 30 percent higher total payments. On a per-farm basis the FCRS reports higher payments for all classes except the largest, but only those with sales under $50,000 differ by more than 25 percent. The distributions of farms and payments by sales class are nearly identical between the two surveys.

Table A-4, showing number of farms and payment amounts by payment level,

and table A-5 by type of legal organization, show only minimal differences between the census and the FCRS.

In summary, the FCRS provides more complete coverage of larger farms and ranches than of smaller operations, and comparisons with the census for these larger farm categories give similar results. Total Government payments by farm type, sales class, payment level, and organization are generally very similar between the census and the FCRS. Payment distributions for these categories are also similar. The major difference between the two surveys occurs in farm numbers and consequently, in per-farm payment averages.

Table A-3--Number of farms receiving Government payments, payment amounts, average payment, and distribution, by sales volume of farm, 1987

Item	Farms receiving payments		Total payments		Payments per farm		Share of farms receiving payments		Share of Payments	
	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS
	Thousands		Million dollars		Dollars		Percent			
Sales class										
Less than $10,000	139.4	98.6	376	516	2,700	5,234	19.9	16.5	3.9	4.8
$10,000-$24,999	125.0	97.0	634	817	5,073	8,421	17.9	16.2	6.6	7.6
$25,000-$49,999	118.1	106.6	1,068	1,278	9,041	11,989	16.9	17.9	11.1	11.9
$50,000-$99,999	134.4	119.7	2,007	2,231	14,939	18,634	19.2	20.0	20.8	20.7
$100,000-$249,999	132.0	124.1	3,247	3,496	24,611	28,170	18.9	20.8	33.7	32.5
$250,000-$499,999	36.3	36.5	1,430	1,511	39,376	41,444	5.2	6.1	14.8	14.1
$500,000-$999,999	10.3	10.5	580	628	56,258	59,844	1.5	1.8	6.0	5.8
$1 million or more	3.8	3.8	304	276	79,660	71,955	.5	.6	3.2	2.6

Sources: 1987 Census of Agriculture; 1987 Farm Costs and Returns Survey, NASS.

Table A-4--Number of farms receiving Government payments, payment amounts, average payment, and distribution, by payment level, 1987

Item	Farms receiving payments		Percent of total payments		Payments: Total payments		Payments: Payment per farm		Payments: Share of Payments	
	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS
	Thousands		Percent		Million dollars		Dollars		Percent	
All payment classes	699	597	100.0	100.0	9,647	10,754	13,800	18,017	100.0	100.0
$1-$999	94	51	13.5	8.5	45	28	482	548	.5	.3
$1,000-$4,999	210	151	30.0	25.3	563	407	2,681	2,700	5.8	3.8
$5,000-$9,999	127	104	18.2	17.5	909	761	7,157	7,300	9.4	7.1
$10,000-$24,999	153	153	21.9	25.6	2,428	2,442	15,835	15,980	25.2	22.7
$25,000-$49,999	77	88	10.9	14.8	2,678	3,067	35,004	34,681	27.8	28.5
$50,000 or more	38	50	5.5	8.4	3,023	4,049	79,319	81,042	31.3	37.7

Sources: 1987 Census of Agriculture; 1987 Farm Costs and Returns Survey, NASS.

Table A-5--Number of farms receiving Government payments, payment amounts, average payment, and distribution, by type of organization, 1987

Item	Farms receiving payments		Percent of total payments		Payments: Total payments		Payments: Payment per farm		Payments: Share of Payments	
	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS	Census	FCRS
	Thousands		Percent		Million dollars		Dollars		Percent	
All organization types	699	597	100.0	100.0	9,647	10,754	13,800	18,017	100.0	100.0
Individuals	585	519	83.7	86.9	6,999	8,139	11,968	15,688	72.6	75.7
Partnerships	83	56	11.8	9.4	1,710	1,822	20,688	32,353	17.7	16.9
Family corporations 1/	27	21	3.9	3.6	850	783	31,425	36,933	8.8	7.3
Other corporations	1	n/a	2/	n/a	46	n/a	31,955	n/a	.5	n/a
All others	3	1	2/	.1	41	9	13,840	17,510	.4	.1

Sources: 1987 Census of Agriculture; 1987 Farm Costs and Returns Survey, NASS. 1/ The FCRS does not distinguish between family and other corporations. 2/ Less than one-tenth of 1 percent.

List of Tables

Appendix table 1--Farm income, assets and debt, and returns, 1985-90

Item	1985	1986	1987	1988	1989	1990F
			Billion dollars			
Income and total returns:						
1. Gross farm income 1/	156	151	163	167	183	188 to 192
2. Wages and perquisites to hired labor	9	9	10	10	10	12 to 13
3. Other operating expenses, excluding interest	75	73	78	81	90	88 to 92
4. Capital consumption	17	16	14	15	15	14 to 16
5. Net income from assets and operators' labor and management (1-2-3-4) 2/	56	53	61	62	68	70 to 74
6. Income imputed to operators' labor and management	26	27	27	28	30	31 to 35
7. Residual income to assets (5-6)	29	27	34	33	38	37 to 41
8. Real capital gain to assets	-11	-1	17	20	6	-5 to 1
9. Total return from assets (7+8)	19	26	51	53	44	35 to 39
10. Interest paid	18	16	15	14	15	13 to 15
11. Real capital gain to debt	6	4	7	5	6	6 to 8
12. Total return to equity (9-10+11)	7	13	43	44	36	28 to 32
13. Real capital gain to assets and debt (8+11)	-5	3	24	25	12	3 to 7
14. Residual income to equity (12-13)	12	10	19	19	24	23 to 27
Balance sheet: 3/						
15. Assets	727	688	716	760	791	810 to 820
16. Debt	166	147	136	131	129	125 to 131
17. Equity (15-16)	561	541	580	629	662	685 to 695
			Percent			
Rates of return and interest rates:						
18. Rate of return on assets (ROA) (7/15)	3.8	3.8	4.8	4.5	4.9	4 to 5
19. Real capital gain on assets (8/15)	-1.4	-.2	2.4	2.7	.8	-1 to 0
20. Total real return on assets (18+19)	2.4	3.6	7.3	7.2	5.7	4 to 5
21. Av. interest rate paid on debt (10/16)	10.1	10.4	10.3	10.7	11.2	10 to 12
22. Real capital gains on debt (11/16)	3.3	2.5	4.8	3.8	4.4	4 to 6
23. Real cost of debt (21-22)	6.8	8.0	5.6	6.9	6.7	5 to 7
24. Rate of return on equity (ROE) ((7-10)/17)	1.9	1.9	3.4	3.2	3.6	3 to 4
25. Real capital gain on equity ((8+11)/17)	-.8	.5	4.3	4.1	1.8	1 to 2
26. Total real return on equity (24+25)	1.1	2.4	7.7	7.3	5.5	4 to 5
27. Net return on assets (NROA) (18-21)	-6.3	-6.7	-5.5	-6.2	-6.3	-7 to -6
28. Spread (20-23) 4/	-4.4	-4.3	1.7	.3	-1.0	-2 to -1

F = forecast. Numbers may not add due to rounding. 1/ Excludes operator dwellings. 2/ Numbers in parentheses indicate components required to calculate a given item. 3/ Excludes operator households and CCC activity. 4/ When total real rate of return on assets exceeds total real cost of debt, debt financing is profitable.

Appendix table 2--Farm income and cash flow statement, 1985-90

Item	1985	1986	1987	1988	1989	1990F
	Billion dollars					
Farm income sources:						
1. Cash receipts	144.1	135.2	141.7	150.2	159	168 to 172
Crops 1/	74.3	63.7	65.6	71.4	75	79 to 82
Livestock	69.8	71.5	76.0	78.8	84	88 to 91
2. Direct Government payments	7.7	11.8	16.7	14.5	11	9 to 10
Cash Government payments	7.6	8.1	6.6	7.1	9	8 to 9
Value of PIK commodities	.1	3.7	10.1	7.4	2	0 to 1
3. Farm-related income 2/	5.3	5.0	5.9	5.7	7	6 to 7
4. Gross cash income (1+2+3) 3/	157.2	152.0	164.3	170.4	177	183 to 189
5. Nonmoney income 4/	8.0	6.9	7.5	7.5	7	7 to 8
6. Realized gross income (4+5)	165.2	158.9	171.8	177.9	185	191 to 196
7. Value of inventory change	-2.3	-2.4	-2.8	-4.1	4	0 to 4
8. Total gross income (6+7)	162.9	156.5	169.0	173.8	189	192 to 199
Production expenses:						
9. Cash expenses 5/ 6/	109.0	104.8	108.2	112.0	123	124 to 127
10. Total expenses	131.7	125.1	127.7	131.8	143	144 to 148
Income statement:						
11. Net cash income 1/ 6/						
Nominal (4-9)	48.2	47.2	56.1	58.4	55	59 to 63
Deflated (1982$) 7/	43.5	41.5	47.8	48.2	43	44 to 48
12. Net farm income 1/						
Nominal total net (8-10)	31.2	31.4	41.2	42.0	47	47 to 52
Deflated (1982$) 7/	28.1	27.6	35.1	34.6	37	35 to 40
13. Off-farm income	55.2	54.5	56.9	57.7	58	58 to 62
Other sources and uses of funds:						
14. Change in loans outstanding 6/	-15.9	-18.7	-11.2	-4.7	-3	-2 to 1
Real estate	-6.2	-7.8	-6.7	-4.5	-3	-2 to 0
Nonreal estate 8/	-9.6	-11.0	-4.6	-.3	0	0 to 1
15. Rental income and monetary change	8.8	8.1	6.8	7.6	8	8 to 10
16. Gross cash flow (11+14+15)	41.1	36.6	51.7	61.3	60	65 to 73
17. Capital expenditures 6/	9.2	8.5	11.1	11.1	13	12 to 15
18. Net cash flow (16-17) 1/ 6/	31.9	28.1	40.6	50.3	47	52 to 59

F = forecast. Totals may not add due to rounding. 1/ Includes net CCC loans. 2/ Income from custom work, machine hire, farm recreational activities, forest product sales, and miscellaneous sources. 3/ Numbers in parentheses indicate components required to calculate a given item. 4/ Value of home consumption of farm products and imputed rental value of farm dwellings. 5/ Excludes depreciation and hired labor perquisites. 6/ Excludes farm households. 7/ Deflated by the GNP implicit price deflator. 8/ Excludes CCC loans.

Appendix table 3--Relationship of net cash to net farm income, 1985-90

Item	1985	1986	1987	1988	1989	1990F
	Billion dollars					
Gross cash income	157.2	152.0	164.3	170.4	177	183 to 189
Minus: Cash expenses	109.0	104.8	108.2	112.0	123	124 to 127
Equals: Net cash income	48.2	47.2	56.1	58.4	55	59 to 63
Plus: Nonmoney income:						
Gross rental value of dwelling	7.1	6.0	6.6	6.7	7	6 to 8
Value of home consumption	.9	.9	.8	.8	1	0 to 1
Value of inventory change	-2.3	-2.4	-2.8	-4.1	4	0 to 4
Minus: Noncash expenses:						
Depreciation & accidental damage	19.6	17.7	16.5	16.7	17	17 to 19
Labor perquisites	.5	.4	.5	.5	*	0 to 1
Minus: Household expenses 1/	2.6	2.2	2.6	2.6	2	2 to 3
Equals: Net farm income	31.2	31.4	41.2	42.0	47	47 to 52

F = forecast. * = less than $500 million. Totals do not add due to rounding. 1/ Includes expenses related to operator dwelling.

Appendix table 4--Cash receipts, 1985-90

Item	1985	1986	1987	1988	1989	1990F
			Billion dollars			
Crop receipts: 1/						
Food grains	9.0	5.7	5.8	7.5	8	[illegible] to 10
Wheat	7.9	5.0	5.0	6.4	7	7 to 8
Rice	1.0	.7	.7	1.1	1	1 to 2
Feed grains and hay	22.6	16.9	14.5	14.3	17	19 to 21
Corn	16.9	12.3	9.9	9.0	11	14 to 16
Sorghum, barley, and oats	3.3	2.3	2.1	2.2	2	2 to 3
Hay (all)	2.4	2.2	2.5	3.0	3	3 to 4
Oil crops	12.5	10.6	11.3	13.5	12	12 to 13
Soybeans	11.2	9.2	10.0	12.2	11	10 to 12
Peanuts	1.0	1.1	1.0	1.1	1	1 to 2
Cotton lint and seed	3.7	3.4	4.2	4.5	5	5 to 7
Tobacco	2.7	1.9	1.8	2.0	2	2 to 3
Fruits and nuts	6.9	7.2	8.1	9.1	9	[illegible] to 10
Vegetables	8.6	8.8	9.9	9.8	11	10 to 12
Greenhouse & nursery	5.4	5.9	6.7	7.0	7	7 to 8
Other crops 1/	2.9	3.3	3.3	3.7	4	3 to 5
TOTAL CROPS	74.3	63.7	65.6	71.4	75	79 to 82
Livestock receipts:						
Red meats	38.5	39.1	44.5	45.9	47	48 to 52
Cattle and calves	29.0	28.9	33.6	36.2	37	36 to 40
Hogs	9.0	9.7	10.3	9.2	9	10 to 12
Sheep and lambs	.5	.5	.6	.5	*	0 to 1
Poultry and eggs	11.2	12.7	11.5	12.9	15	15 to 17
Broilers	5.7	6.8	6.2	7.4	9	8 to 10
Turkeys	1.8	1.9	1.7	2.0	2	2 to 3
Eggs	3.3	3.5	3.2	3.1	4	3 to 5
Other poultry	.5	.4	.4	.4	*	0 to 1
All dairy products	18.1	17.7	17.7	17.6	19	19 to 23
Other livestock	2.0	2.0	2.3	2.4	2	1 to 3
TOTAL LIVESTOCK	69.8	71.5	76.0	78.8	84	88 to 91
TOTAL RECEIPTS	144.1	135.2	141.7	150.2	159	168 to 172
Program 2/	66.2	53.9	52.8	56.3	70	75 to 79
Non-program 3/	77.9	81.3	88.8	93.9	89	91 to 95

F = forecast. * = less than $500 million. Totals may not add due to rounding. 1/ Includes sugar, seed, and other misc. crops. 2/ Receipts from commodities directly supported by farm programs. 3/ Commodities not receiving direct support.

Appendix table 5--Farm income distribution by enterprise type, 1988-90 1/

Item	Crops					Livestock		
	Total crops	Cash grain 2/	Tobacco	Cotton	Fruit, nut, vegetables	Total livestock	Red meat	Dairy
				Thousands				
Number of farms:								
1988	812	408	105	24	88	1,385	1,113	194
1989	803	403	104	24	87	1,368	1,099	191
1990F	795	399	103	24	86	1,355	1,089	190
Income:				Billion dollars				
1. Cash receipts--								
Crops								
1988	64.7	28.9	2.1	4.2	16.5	6.7	5.2	1.0
1989	68.5	30.3	2.4	4.4	17.7	6.9	5.4	1.1
1990F	73	34	3	5	17	7	6	1
Livestock								
1988	4.0	2.9	.1	.1	.1	74.9	40.2	19.2
1989	4.0	3.0	.1	.1	.1	79.7	40.9	20.9
1990F	4	3	*	*	*	85	44	22
2. Direct Government payments--								
1988	9.5	7.5	.1	.9	.1	5.0	3.7	1.1
1989	7.1	5.6	.1	.7	.1	3.8	2.8	1.0
1990F	6	5	*	1	*	3	2	1
3. Gross cash income-- 3/								
1988	80.4	40.7	2.4	5.3	16.8	90.0	51.1	21.7
1989	82.6	40.7	2.7	5.3	18.0	94.9	51.6	23.4
1990F	86	43	3	6	18	100	54	25
4. Cash expenses--								
1988	48.5	28.1	1.9	2.6	4.8	63.5	41.2	16.5
1989	53.7	31.3	2.1	3.0	5.3	69.1	44.6	18.2
1990F	55	32	2	3	5	70	45	18
5. Net cash income--								
Current dollars 4/								
1988	31.9	12.6	.4	2.8	12.0	26.5	9.9	5.2
1989	28.9	9.4	.6	2.4	12.6	25.8	7.0	5.2
1990F	31	11	1	3	12	30	9	6
Deflated ($ 1982)								
1988	26.3	10.4	.4	2.3	9.9	21.9	8.2	4.3
1989	22.9	7.4	.5	1.9	10.0	20.4	5.5	4.1
1990F	24	8	1	2	9	22	7	5
Balance Sheet: 5/								
6. Farm assets--								
Real estate								
1988	216.1	100.0	12.0	7.6	41.0	339.3	259.8	55.5
1989	224.7	104.0	12.5	7.9	42.6	352.9	270.1	57.7
1990F	232	107	13	8	44	364	279	60
Nonreal estate								
1988	77.9	45.2	3.8	4.5	7.6	127.1	84.6	30.9
1989	81.2	47.1	3.9	4.6	8.0	132.5	88.2	32.2
1990F	83	48	4	5	8	136	90	33
7. Total liabilities--								
1988	60.1	35.9	1.6	3.1	6.0	71.3	45.1	21.5
1989	59.0	35.3	1.6	3.0	5.9	69.9	44.2	21.1
1990F	59	35	2	3	6	69	44	21
				Percent				
8. Debt-to-asset ratio--								
1988	20	25	10	26	12	15	13	25
1989	19	23	10	24	12	14	12	23
1990F	19	22	9	23	11	14	12	23

F = forecast. * = less than $500 million. Numbers may not add due to rounding. 1/ Farm types are defined as those with 50 percent or more of all sales accounted for by a specific commodity or commodity group. 2/ Includes farms earning at least half their receipts from sales of wheat, corn, soybeans, rice, sorghum, barley, oats, or a mix of cash grains. 3/ Equals 1 + 2 + farm related income. 4/ Equals 3 - 4. 5/ Excludes farm households.

Appendix table 6--Farm production expenses, 1985-90

Item	1985	1986	1987	1988	1989	1990F
			Billion dollars			
Farm-origin inputs	29.6	30.8	33.1	36.7	39	38 to 42
Feed	17.2	17.9	18.0	20.6	23	21 to 24
Livestock	9.2	9.8	11.8	12.8	13	12 to 15
Seed	3.1	3.2	3.3	3.3	4	3 to 5
Manufactured inputs	20.2	18.2	18.1	18.4	21	20 to 23
Fertilizer	7.5	6.8	6.5	6.8	8	6 to 8
Fuels and oils	6.4	5.3	5.0	4.9	5	5 to 7
Electricity	1.9	1.8	2.2	2.2	2	2 to 3
Pesticides	4.3	4.3	4.5	4.4	6	5 to 7
Total interest charges	18.6	17.1	15.5	15.2	15	14 to 15
Short-term interest	8.7	7.9	7.3	7.3	7	7 to 8
Real estate interest	9.9	9.1	8.2	7.9	8	6 to 8
Other operating expenses	31.1	30.2	32.6	33.0	36	36 to 40
Repair & maintenance	6.6	6.5	6.8	6.9	8	7 to 9
Labor expenses	9.8	9.9	10.8	11.2	12	11 to 13
Machine hire & custom work	2.4	2.1	2.1	2.3	3	2 to 4
Animal health	1.2	1.2	1.3	1.3	2	1 to 2
Marketing, storage & transportation	4.1	3.7	4.0	3.3	4	4 to 6
Misc. operating expenses	7.0	6.8	7.6	8.1	8	8 to 9
Other overhead expenses	32.2	28.8	28.5	28.5	32	31 to 34
Capital consumption	19.6	17.7	16.5	16.7	17	17 to 19
Taxes	4.2	4.1	5.0	4.8	5	5 to 6
Net rent to nonoperating landlords	8.4	7.0	7.0	7.0	8	8 to 10
TOTAL PRODUCTION EXPENSES	131.7	125.1	127.7	131.8	143	144 to 148
Cash expenses 1/	109.0	104.8	108.2	112.0	123	123 to 127

F = forecast. 1/ Cash expenses equal total expenses minus depreciation, operator dwelling expenses, and noncash labor benefits.

Appendix table 7a--Balance sheet of the farming sector, excluding operator households, December 31, 1985-90

Item	1985	1986	1987	1988	1989	1990F
			Billion dollars			
Farm assets	727.0	688.1	715.9	760.0	791	810 to 820
Real estate 1/	540.8	507.3	525.4	555.4	578	590 to 600
Livestock and poultry	46.3	47.8	58.0	65.5	70	70 to 74
Machinery and motor vehicles	83.8	81.9	79.4	80.6	84	84 to 88
Crops stored 2/	22.9	16.7	18.0	23.0	24	22 to 26
Financial assets 3/	33.3	34.5	35.1	35.5	37	35 to 39
Farm debt	166.1	147.4	136.2	131.4	129	125 to 131
Real estate 4/	88.6	80.8	74.1	69.7	67	64 to 68
Nonreal estate	77.5	66.6	62.0	61.7	62	60 to 64
Total farm equity	560.9	540.7	579.7	628.6	662	685 to 695
			Percent			
Selected ratios:						
Debt-to-asset	22.8	21.4	19.0	17.3	16	15 to 16
Debt-to-equity	29.6	27.3	23.5	20.9	20	18 to 19
Debt-to-net cash income	345.0	311.0	243.0	225.0	237	200 to 210

F = forecast. 1/ Excludes value of operator dwellings. 2/ Non-CCC crops held on farm plus value above loan rate for crops held under CCC. 3/ Excludes time deposits and savings bonds. 4/ Includes CCC storage and drying loans.

Appendix table 7b--Balance sheet of the farming sector, including operator households, December 31, 1985-90

Item	1985	1986	1987	1988	1989	1990F
			Billion dollars			
Farm assets	884.6	839.1	883.6	935.1	970	995 to 1,005
Real estate	650.0	606.0	633.5	665.8	688	705 to 715
Livestock and poultry	46.3	47.8	58.0	65.5	70	70 to 74
Machinery and motor vehicles	88.3	86.1	84.5	85.7	88	88 to 92
Crops 1/	22.9	16.7	18.0	23.0	24	22 to 26
Household goods	27.8	28.7	32.9	37.0	41	43 to 47
Financial assets	49.3	53.8	56.7	58.1	59	57 to 61
Farm debt	187.9	166.6	153.7	148.5	146	141 to 147
Real estate 2/	105.7	95.9	87.7	83.0	81	77 to 81
Nonreal estate	82.2	70.8	66.0	65.6	66	63 to 67
Total farm equity	696.7	672.5	729.9	786.6	824	850 to 860
			Percent			
Selected ratios:						
Debt-to-asset	21.2	19.9	17.4	15.9	15	14 to 15
Debt-to-equity	27.0	24.8	21.1	18.9	18	16 to 18
Debt-to-net cash income	391.0	352.0	274.0	254.0	268	230 to 240

F = forecast. 1/ Non-CCC crops held on farm plus value above loan rate for crops held under CCC. 2/ Includes CCC storage and drying loans.

Appendix table 8--Farm financial ratios: liquidity, solvency, profitability, and financial efficiency, 1985-90

Farm financial ratios	1985	1986	1987	1988	1989	1990F
			Ratio			
Liquidity ratios:						
Household debt service coverage 1/	3.91	4.22	5.07	5.46	5.3	5.7 to 5.9
Farm business debt service coverage 2/	2.17	2.31	2.89	3.14	2.9	3.2 to 3.4
Debt servicing 3/	.19	.18	.15	.14	.1	.1 to .2
Times interest earned ratio 4/	2.91	3.09	3.99	4.09	4.4	4.9 to 5.1
			Percent			
Solvency ratios:						
Debt/asset 5/	22.8	21.4	19.0	17.3	16.3	15 to 16
Debt/equity 6/	29.6	27.3	23.5	20.9	19.5	18 to 19
			Percent			
Profitability ratios:						
Return on equity 7/	1.9	1.9	3.4	3.2	3.6	3 to 4
Return on assets 8/	3.8	3.8	4.8	4.5	4.9	4 to 5
Net farm to gross cash farm income 9/	19.9	20.7	25.1	24.7	26.2	27 to 29
Financial efficiency ratios:			Percent			
Gross ratio 10/	69.3	68.9	65.8	65.7	69.2	59 to 61
Interest to gross cash farm income 11/	11.3	10.8	8.9	8.4	8.2	7 to 8
Asset turnover 12/	20.4	21.5	23.4	23.1	22.9	23 to 24
Net cash farm income to debt ratio 13/	37.4	40.6	49.9	54.2	53.0	58 to 60
			Ratio			
Financial leverage index 14/	.51	.50	.71	.70	.7	.7 to .8

F= forecast. 1/ Assesses the ability of farm sector households to repay both principal and interest. 2/ Assesses the ability of farm businesses to repay both principal and interest. 3/ Indicates the proportion of gross cash farm income needed to service debt. 4/ Shows the farm sector's ability to service debt out of net income. 5/ Shows the proportion of all assets that are financed with debt. 6/ Measures the relative proportion of funds provided by creditors (debt) and owners (equity). 7/ Measures the ability of farm sector management to realize an adequate return on the capital invested by the owner(s). 8/ Measures how efficiently managers use farm assets. 9/ The profit margin indicates profits earned per dollar of gross income. 10/ Gives the portion of gross cash farm income absorbed by production expenses (claims on farm businesses). 11/ Gives the proportion of gross cash farm income committed to interest payments. 12/ Measures the gross farm income generated per dollar of farm business assets. 13/ Indicates the burden placed on net cash farm income to retire outstanding debt. 14/ Indicates whether or not the use of financial leverage is beneficial.

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